

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 340. -Vol. XII.]

LONDON: SATURDAY, FEBRUARY 26, 1842.

[PRICE 6D.]

LEAD MINE ON SALE.—TO BE SOLD, BY AUCTION,
at the White Horse Hotel, Holywell, on Wednesday, the 2d day of March next, at Four o'clock in the afternoon, subject to such conditions of sale as shall be then arrived upon, all that very valuable and well-known lead mine, called the HOLYWELL LEVEL MINE, situated near to the town of Holywell, and comprising an almost unlimited extent of mineral land. The mine has been worked by means of an adit level, which has been driven nearly a mile in length, and drains to the depth of seventy yards. There is a steam-engine on the mine, used for pumping and winding, and is in excellent repair. Very few trials have been made below level, and little doubt exists in the minds of the most experienced miners of there being abundance of ore under the present workings. The profits, for many years, averaged from £7000 to £10,000 per annum. The lands are held under leases from Mr. P. Moxley, Bart., the late D. Penant, Esq., R. W. Granger, Esq., and others, for the term of twenty-one years, and at the usual royalties. For further particulars apply (if by letter, post-paid) to Mr. Samuel Williams, Pender, Holywell, Flintshire.

EXTENSIVE SALE OF TOOLS, IMPLEMENTS, MACHINERY, AND STOCK IN TRADE OF AN ENGINEER AND IRONFINDER,
situated on business.—Messrs. OXENHAM and SON will sell, by AUCTION, on the Premises, on Monday, March 7, and following day, at Twelve o'clock, in consequence of the works being about to be converted into saw-mills by a public company, the following valuable MACHINERY, recently completed at an immense cost, and in accordance with the latest inventions—Viz., a powerful self-acting turning and boring lathe for steam engine cylinders of any size; triple geared and screw cutting ditto; two capital self-acting drilling machines, boring ditto; two portable punching and shearing ditto, a screw press of immense power, a powerful crane, capable of lifting eight tons; portable and other furnaces, bellows, anvils, &c. The entire stock of tools of a foundry, smith, boiler maker, and engineer, lathes, vices, valve-patterns and models of marine and land engines, &c.; a quantity of plate, bar, and pig-iron, steel, and numerous effects of the utmost utility; also, a quantity of stock, &c. Catalogues had at the works; at the Auction Mart; and at Messrs. OXENHAM's office, 35, Oxford-street, near the Pantheon.

TWO SHARES in the ROYAL POLYTECHNIC INSTITUTION FOR SALE, price £110.—Inquire of the Secretary, at the Institution.

COAL MINES IN STAFFORDSHIRE.—TO BE LET,
BY PRIVATE CONTRACT, for a term of Twenty-one years, the MINES OF COAL, CANNEL, AND IRONSTONE, lying and being under the estate called the PEACOCK HILL, situated in the township of Yell-o'-th'-Hill and Chatterley, in the parishes of Audley and Wootton, in the said county of Stafford, and now in the occupation of Mr. James Harrison. The estate comprises 72 acres 2 roods 20 perches of land, of statute measure, or thereabouts; and the mines under it are the Peacock Hill Mine, the Great Row, and the Little Row, all of which crop out within the estate. The Peacock Hill Mine is worked by a level of 800 yards of the per cent of coal and one foot of cannel, and the Little Row, five feet of coal and cannel. The mines will be let at a rent per foot thick per acre for the coal and cannel, and a rent per ton for the ironstone, with a rent certain.

The tenant will show the estate, and afford all facilities to parties wishing to view it, and a plan may be seen, and further particulars obtained, on application to Messrs. Bonney and Son, solicitors, Knutsford, Cheshire, to whom any one wishing to treat may apply.

VALUABLE MINERAL PROPERTY IN CUMBERLAND.
—TO BE SOLD, OR LET, the LEASE of the MANOR OF BRAITHWAITE and COLEDALE, situated in the county of Cumberland, and held under the Earl of Eglington; several LEAD and COPPER MINES having been already opened, and at present in working order—one of which is now yielding good ore; and on account of the distance from the residence, and also the business of the advertiser, he is anxious to sell the lease (which was taken for twenty-one years, six of which are yet unexpired), and to any company or individual purchasing, with an intention to prosecute the search for ore, the advertiser can warrant the renewal of the lease. For further particulars, apply to Mr. John Trehay, promoter, Whitehaven. N.B.—A pair of Blast Cylinders and Smelting Apparatus to dispose of, apply to the advertiser.

BALLESWIDEN MINE, St. Just, Cornwall.—In consequence of the outlay in this mine being larger than was calculated on, it has been determined to increase the number of shares from Eighty-seven to One Hundred and Forty-five. Of these additional shares, eighteen will be held by some of the present shareholders, but as a considerable portion of the mine is held by trust men who do not consider themselves authorized to extend their adventure, it has been resolved to offer FOR SALE, BY PRIVATE CONTRACT, FORTY-THREE SHARES in this very productive and highly promising mine. Ballewidren is situated on an extensive body of land, producing upwards of 800 tons of tin per month and is capable of yielding a much larger quantity. There are on the mine—one steam engine, two steam winches, two steam stamps, working 144 heads, two large water wheels, working thirty six stamps, six horse winches, and every requisite machinery for effectually and profitably working the mine. The present is a most eligible opportunity for the investment of capital, as the mine is in full course of working, and realizing a handsome profit.

Plans and sections of the mine may be seen, and every information obtained, at Messrs. T. and W. Smith's, 25, Fenchurch street, London, to whom application by shares may also be made; at the counting-house of Mr. R. V. Davy, the agent, Penzance; or to the captain on the mine.

COMBUSTION OF COAL, CHEMICALLY & PRACTICALLY CONSIDERED. With coloured plates. By CHARLES WYLLIAMS, Esq. London: Simpkin, Marshall, & Co., and J. Wale, Birmingham. Wrightson & Co., Leeds.

NEW AND IMPORTANT WORK ALL CONCERNED IN IRON WORKS. PRACTICAL TREATISE ON THE MANUFACTURE OF IRON.—J. DOBSON, 126, Chancery-lane, Philadelphia (U.S.), proposes to publish, by subscription, the following most important work:—A COMPLETE THEORETICAL AND PRACTICAL TREATISE ON THE MANUFACTURE OF IRON.

Comprising a full account of the different ores, their analyses, &c., the various processes and simple descriptions of the furnaces, forges, rolling-mills, &c., &c., with nearly seventy very large plates, which are all drawn to a scale, and may be considered as working drawings—this includes a translation of the whole of the great work on iron of Messrs. Le Blanc and Walter, and contains all the numerous plates, with additions from other sources, and numerous analyses of the coal and iron of this country and Europe, together with the statistics of the coal and iron of the United States, and abstracts of the most important patents relating to iron, with critical remarks—also, an Essay on the Smelting of Iron with Anthracite Coal, first published in Pennsylvania, by R. W. Roberts, Esq., civil engineer, to be published under the superintendence of J. C. Smith, Esq., professor of chemistry attached to the arts, at the Franklin Institute. It is scarcely necessary to speak of the value of a work, such as this, which would be of the greatest interest to the metallurgical iron master, as well as to every one concerned, either directly or indirectly, in this most important subject. The great French work of Le Blanc and Walter, being confessedly the most complete that has yet appeared, it will be re-estimated in this, with additions; the plates are all drawn to a scale, which will enable any one to construct, by their means, whatever may be required. The Essay on the Smelting of Iron with Anthracite Coal, by Mr. Roberts, will be found very interesting; it is the production of a gentleman of talents, and of sound judgment, and a successful research, who, highly favoured by his position, has given the subject much attention. The numerous analyses of the coal and iron, some of our own country and Europe, will afford much interesting and useful information, while the statistical portion will be drawn from the most authentic sources. Mr. C. Taylor, Esq., a gentleman well known for his talents and accuracy in research, has procured his valuable assistance. It is also intended to give abstracts of the most important recent patents relating to iron, accompanied with critical remarks on the whole forming the most complete work on the subject that has yet been published in any country, and the only one of the kind in the English language. The work will be put to press as soon as there are the authorities, and a second edition will be published. It will be published in eight parts, each part to contain eight or more very large folio plates, with the accompanying text. The price per part will be five dollars, payable on delivery. As it is designed to put the work to press as early as possible, gentlemen who may wish to order a copy, or a favour by transmitting their orders to the publisher without delay.

THE LONDON MERCANTILE JOURNAL, published every Tuesday, at the office, No. 41, Abchurch-lane, contains forty-eight columns of the most important and interesting news, which is comprised in the most accurately compiled Prices Current of the London, Provincial, and Foreign Markets, with current stock of London and Exports; the whole forming, in one sheet, the most complete weekly record of trade, commerce, and agriculture ever presented to the public. Its columns, free from political bias, are devoted to the consideration and discussion of those great commercial subjects to which Great Britain owes her pre-eminence in the world; and it contains, in its foreign and colonial trade, ships, colonies, and commerce. To our foreign commercial relations, which have been so long engaged by the public press, particular attention is given. From its extensive and accurate correspondence, this journal offers peculiar advantages to the shipping interest, bankers, and public companies, as a medium for advertising. Orders for advertisements and subscriptions at the office, and by every messenger to the United Kingdom.

ON SALE, A QUANTITY OF COAL OIL, FOR BURNING IN THE OPEN AIR.—This affords a good and an economical light, and is well adapted for use on Railways, and in public walks, generally, where night outdoor labour is required; price One Shilling per Gallon.—Apply to Mr. Joseph C. Lane, 14, Sandhill, Newcastle-upon-Tyne.—Newcastle-upon-Tyne, Feb. 15.

WANTED, a respectable WORKING ENGINEER, who must be a person of good general ability and experience in Mine Machinery, and capable of making plain sketches.—Apply (post free), stating salary required, references to character, to Edward Barnes, Esq., Rathfriland, County Wicklow.

TO THE OWNERS OF IRON-WORKS, COLLIERIES, &c.
A Person, who has had considerable experience in the erection and management of blast-furnaces and the engineering department of an iron-works and collieries, is desirous of obtaining a situation; he can be well recommended by his present employers for respectability of character and ability as an engineer. Communications addressed "A. B.," to the Editor of the Glasgow Herald, will be attended to.

TO RAILWAY DIRECTORS AND CONTRACTORS.—A gentleman, who has had considerable experience in the construction of railways, wishes an engagement, as traffic manager, or engineer, on a line of railway; he has a good knowledge of machinery, and all kinds of work connected with the construction and upholding of railways, and would have no objection to engage with any respectable contractor, as engineer, or general manager; simple testimonials of character and ability can be given from the directors by whom he has been employed.—Letters, or applications, addressed "A. B.," at Messrs. Harbottle and Co., Agents, Waterloo-place, Edinburgh, will be attended to.

BRAZILIAN COMPANY.—The directors having resolved to make a CALL OF FIVE SHILLINGS per share on the Brazilian Company, the holders are requested to pay the same at the office of the company, on Thursday, Friday, or Saturday, the 2d, 3d, and 4th of March, between the hours of Eleven and Three o'clock. They are requested to leave at the same time their vouchers, that the instalment may be indorsed thereon. All shares on which the call may not be paid are liable to forfeiture. A report from the directors may be had at the office of the company, 4, Broad-street-buildings.—February 19.

BISSE BRIDGE MINING ASSOCIATION.—Notice is hereby given, that the Adjourned General Meeting of shareholders, which was to have been held on the 2d of March, is POSTPONED until Thursday, the 17th day of March next, on which day it will take place at the George and Vulture Taverns, Cornhill, London, at One o'clock precisely. And notice is hereby also given, that at such meeting on the 17th of March will be taken into consideration the propriety of Dissolving the Association, and disposing of the materials, machinery, and other property on the mine. By order of the directors, RAXENDALE, TATHAM, UPTON, and JOHNSON, Great Winchester-street, Feb. 25.

BRISTOL and EXETER RAILWAY.—Notice is hereby given, that the next HALF-YEARLY GENERAL MEETING of the proprietors of this company will be held, in pursuance of the Act of Parliament, at the White Lion Hotel, in the city of Bristol, on Thursday, the 2d of March, at Twelve o'clock, for the election of four directors in the room of those who retire by rotation, and for other affairs. The chair will be taken at One o'clock precisely. FREDERICK RICKETTS, Chairman. The retiring directors may be re-elected. Shares in arrears do not entitle the holders to vote. The transfer books will be closed on Monday, the 21st February, and not re-opened until after the said General Meeting, on the 2d of March. By order of the board of directors, J. S. BADHAM, Secretary. Office, 26, Broad-street, Bristol, Feb. 4.

DE DUNSTANVILLE COPPER MINING COMPANY.—Notice is hereby given, that a CALL OF TEN SHILLINGS per share on this day made by the directors on the shareholders of the above Mine, to be paid, on or before the 1st day of March next, at this office. 25, Birch-lane, London, Jan. 28.

SOUTH CARADON MINE.—At a General (two monthly) Meeting of the shareholders in this mine, held at the mine, on Tuesday, the 22d instant, pursuant to notice, a DIVIDEND OF TWELVE POUNDS TEN SHILLINGS per 100th share was declared, and is now payable, either at the mine or at the East Cornwell Bank, Liskeard. THOMAS RITTOU, Proprietor. Dated South Caradon Mine, in the parish of St. Cleer, Liskeard, Cornwall, Feb. 12.

THE MINERS' COMPANY.—The Court of Assistants of the Governor and Company of Copper Miners in England hereby give notice, that they have made a CALL OF TEN POUNDS per share upon all shares on which no more than 2/6 per share has been paid; the said call to be paid on or before the 15th day of April next, at the banking house of Messrs. Glyn, Hallifax, Mills, and Co., Lombard-street, or at the office of the company. Office of the Governor and Company of Copper Miners in England, Old Broad-street, London, Feb. 25.

TRELEIGH CONSOLIDATED MINING COMPANY.—Notice is hereby given, that the directors have this day made a further CALL OF FIVE SHILLINGS per share, and that the same is to be paid into the London Joint-Stock Bank on or before the 1st of April next. By order of the board, HOWLAND NICHOLSON, 25, Threadneedle-street, Feb. 12.

WEST CORK MINING COMPANY.—Notice is hereby given, that the GENERAL HALF-YEARLY MEETING of this company will be held at the George and Vulture Taverns, Cornhill, in the city of London, on Tuesday, the 1st day of March next, at One o'clock in the afternoon, for the general business of the company, and also for the election of two directors and one auditor, and take notice, that every proprietor intending to become a candidate to fill the office of director or auditor, must, within fourteen days from the time of the opening of this advertisement, signify by some writing under his hand, stating the place of his residence and addition, such writing to be left, within the same fourteen days, at the office of the company, 25, Coleman-street, in the city of London, his intention so to become a candidate. By order of the board, THOS. M. BRADWELL, Secretary. London, February 5.

SMOKE NUISANCE.—ECONOMY OF FUEL WITHOUT THE NUISANCE FROM SMOKE, by C. W. WILLIAMS' AIR FURNACE. The principle of this furnace consists in the mode by which the air is introduced to the gaseous matter evolved from coal, whereby a more perfect combustion of the constituents is effected, the process being conducted on true chemical principles as explained by Mr. Williams, in his Treatise on the Combustion of Coal. A furnace constructed on this principle may, by permission, be daily seen in action at the Liverpool and Harrington Water-works, Bolton-street, Liverpool. For further information, apply to Messrs. C. and Co., agents, 4, Town-hall-buildings, Cross-street, Manchester; or to Mr. C. W. Williams, Liverpool.

ANDREW SMITH'S PATENT WIRE ROPES, for standing rigging, lighting conductors, strapping of blocks, mining, railways, and general purposes; almost half the size and weight of hemp ropes, and at 21 per cent cheaper. Testimonials to that effect, with specimens, may be seen, and every other machine obtained, at the office, 27, New Broad-street, City, Manchester, Mill-wall, Poplar, and also of the following Agents:—
Birmingham and Co., 12, Gorse Place, Liverpool.
Matheson & Co., Glasgow.
John Bellamy, Manchester.
John Thompson and Co., Plymouth.
J. V. Trevelyan, London.
Thomas Moseley and Son, Perth and London.
Clarke and Young, Glasgow.
James Elliot and Co., Glasgow.
James Goss, Glasgow.
J. M. Beattie, Chemist's Lane, High-street, Glasgow.

This rope has been in use for standing rigging in her Majesty's Navy, and in a great number of merchant vessels, for upwards of six years, and is giving the highest satisfaction; the rope is also employed in various mines and railways in different parts of the Kingdom.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonials to the usefulness with which the Westons' Patent Fuse has been employed from every part of the Kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c., &c.:—
"I am very glad to hear that my Westons' Patent Fuse has been of any service to you. They have been given from a thorough conviction of the great advantages of the safety Fuse, and I am quite willing that you should display my name on the device of this Fuse."
Westons' Patent Fuse sold by the Patentees, SHEPHERD, SMITH, and DAVES, Cambridge, Cornwall.

ELECTRO-MAGNETISM AS A MOVING POWER.

A paper of considerable importance was read at the last Manchester Royal Victoria Gallery conversations, entitled "An Inquiry into a Peculiar Property of the Electro-Magnet, in reference to the theories of Magnetism, and the Movement of Machines," by Mr. J. P. Joule. The author commenced by taking a short review of the present theories with reference to the power of electro-magnetism being made available for mechanical purposes. Professor Henry, Mr. Sturgeon, and, after them, other ingenious individuals, had constructed various machines to be set in motion by magnetic attraction and repulsion; and at one period the expectations that electro-magnetism would supersede steam as a motive force, were very sanguine. There appeared nothing to prevent it but the resistance of the air, which might be easily removed, and the resistance of the iron, which he (Mr. Joule) had succeeded in overcoming, by having the iron bars exceedingly well annealed. Mr. Joule next noticed the experiments of Professor Jacob, who had succeeded in propelling a boat, or vessel, on the Neva, by means of electro-magnetism. The Russian philosopher, however, had not given the details of his experiments, or the laws by which the power was applied; and he (Mr. Joule) had been induced to make some experiments, with a view to ascertain whether electro-magnetism was applicable as a mechanical motive power. The experiments made by him two years ago had already been reported in Mr. Sturgeon's periodical, and he need not, therefore, further refer to them. In his subsequent experiments, with a powerful apparatus, he found that every pound of zinc produced a mechanical force which raised 334,400 lbs. to the height of one foot, when the revolving magnets moved eight feet per second. The duty of the best Cornish steam-engine is 1,500,000 lbs., or nearly five times the extreme duty he was able to obtain by the consumption of one pound of zinc. This was so very unfavourable a result, that he almost despaired of electro-magnetism being applicable to mechanical purposes in the place of steam. He did not see how any arrangement of the apparatus could make the duty of a pound of zinc much superior to the duty of a pound of coal; and, even if it could be attained, the expense of zinc was so great, compared with the price of coal, as to prevent such apparatus being even used for any but peculiar purposes. Mr. Joule then proceeded to the second subject of his paper, a newly-discovered peculiar property of the electro-magnet. A few weeks ago, an ingenious gentleman of this town suggested to him a novel form of magnetic engine, being of opinion that a bar of iron would increase in length by receiving the magnetic influence; and although the movement was certainly very small, still it might be found available as a source of power, on account of the great force with which it would operate. At that gentleman's request, he entered into experiments, and also calculated whether this new source of power might be advantageous for the moving of machines. He took a length of thirty feet of copper wire, one-twentieth of an inch in thickness, and covered with cotton thread, and formed it into a coil, 22 inches in length and one-third of an inch interior diameter. This was secured in a perpendicular position, and a rod of iron was suspended, so as to pass through the coil, and to receive the magnetic influence whenever the current was communicated to the coil. The upper end of the rod was fixed, and the lower extremity was attached to a series of levers which multiplied its motion about 3700 times. He found that a rectangular bar of iron, a quarter of an inch broad, caused the index to spring from its place one-tenth of an inch on the communication of the current. After a short interval, the index ceased to vibrate, and began to advance, in consequence of the expansion of the bar; and, on breaking the circuit, the index began to vibrate about a point one-tenth of an inch lower than that to which it had attained. But this distance was multiplied by the levers; and reducing it, he found that the real elongation of the bar was the 30,000th part of an inch, or the 730,000th part of its whole length. Similar results were obtained by the use of iron wire, two feet long, and one-twelfth of an inch in diameter; there he found the increment produced was the 33,000th part of an inch. This increment did not appear to depend upon the thickness of the bar, for an electro-magnet, made of iron, three feet long, was found to expand to nearly the same extent, compared with its length, as the wires did in the previous experiment, and very nearly in proportion to the intensity of the magnetism and length of the bars. He had tried the experiment of using copper wire two feet in length, but the attempt was unattended with the slightest success. A very good way to observe the experiment was to examine one end of the electro-magnet with a powerful microscope. The increment was then observed to take place with extreme suddenness; the expansion was so very rapid that it might be felt by the touch; and, if the electro-magnet be placed perpendicularly on a hard elastic body, like glass, the bar can readily deflect, by the sound, that it makes a slight jump. A distinct musical sound is heard every time the contact is made, or broken, from the battery—another proof of the suddenness with which the particles of iron are disturbed. With respect to the application of this new force to the moving of machinery he had nothing favourable to advance. An electro-magnet, consisting of a bar of iron, one inch square and three feet long, exerts a force equal to lifting about 10 lbs. over a space of the 30,000th part of an inch, every time contact with the voltaic battery was made or broken; if, therefore, contact should be made and broken 100 times in a second, in one hour we should have only 15 lbs. raised one foot. This force was far too small, and the duty per pound of zinc was really less than the duty of the common Cornish engine. Mr. Joule, in conclusion, discussed the different theories of electro-magnetism, illustrated by diagrams, each representing six atoms of iron, each surrounded by two concentric rings, to represent atmospheres of electricity and magnetism, the spaces between being supposed to be filled with caloric ether. We shall not enter into this part of the subject further than to state, that Mr. Joule inclines to the theory of Ampere as preferable to that of Ampere, especially as it satisfactorily explains many facts left unaccounted for by the latter. The theory of Ampere, as modified by Mr. Joule himself, the latter considered as affording a simple and comprehensive explanation of facts. Whether such a state of things as he had assumed really existed in Nature, would, of course, require further experiments to prove.

The CHAIRMAN expressed the pleasure with which he had listened to the important facts stated in this interesting communication, especially as to its practical bearing on electro-magnetism, as a motive power which had been supposed to be enormous.—Mr. J. DAVIES said, that one of the most interesting, and perhaps most novel, parts of the paper just read referred to a new property of electro-magnetism, with which, as far as he knew, they had all been previously unacquainted. He meant the dilatation of a body on the application of magnetism. This property was not only interesting in reference to magnetism itself, but it went a great deal farther; and in so far as assumed a still more interesting aspect. We know that heat had a similar expansive property; and this was, therefore, another link in that chain, which he had no doubt would ultimately connect heat and electricity together. We knew the identity of galvanism, electricity, and magnetism; and this was another step towards identifying these with heat.—Mr. JOULE observed that we had no direct experiments, to show that electricity and magnetism were the same; we had many to prove that the one could produce the other, but still not one to prove the absolute identity of the two.—The CHAIRMAN observed, that there was just as little proof in favour of the identity of electricity and heat, for either would produce the other.—Mr. STEVENSON was decidedly of opinion, that electricity and magnetism were as distinct as hydrogen and oxygen. Mr. Joule had not said that the bulk of the iron would be augmented by his experiment, but only that the bar would be elongated; and he even expressed an opinion, that, if the experiment could be made with sufficient delicacy, it would be found that there was contraction laterally, so that there was no augmentation of bulk, but merely an elongation of the bar.—In answer to a question by Mr. DAVIES, Mr. JOULE said, he supposed the blue circle (magnetism) in the diagram did not signify work with the red (electricity); and, on some account or other, the blue could never entirely depart, or be thrown away from the atom of iron. In answer to a question by Mr. James Woolley, he said it would be difficult to make an experiment that should ascertain whether there was lateral contraction, simultaneously with elongation of the magnetized bar. The bar he had tried was twenty-four inches in length, and half an inch or so thick in breadth. If the breadth had diminished at the same time the length increased, so as for the bulk to remain the same, it would require an extremely fine and delicate apparatus to detect such contractions.—Mr. WOODWARD said Mr. Joule ascertained whether there was any change in the temperature of the iron during the experiment?—Mr. JOULE.—The thermometer was noticed; the index showed it by a regular motion, quite distinct from the sudden motion produced by the induction of magnetism, which occasioned a visible

LAW INTELLIGENCE.

WEST CORK MINING COMPANY—JUDGMENT.

ROSE'S COURT—FEB. 22.

VINCENT P. PIKE.—This was an appeal which was argued in the court of the last session. It was an appeal from a decree of the Lord Chancellor of Ireland, made in two causes, in the first of which the present appellant was defendant, and in the other plaintiff. The first bill was filed to compel specific performance of a contract in the purchase of certain mines for a company; the second bill was filed to set aside the contract, on the ground of fraudulent representation. The Lord Chancellor decreed for the plaintiff in the first bill, that there should be specific performance of the contract, and he dismissed the second bill. At the conclusion of the arguments, the House had taken time to consider the judgment.

Lord COTTENHAM now moved the judgment of the House to dismiss the appeal against the decree, which had itself dismissed the bill for rescinding the contract, on the ground of fraud in the representation.—Lord HUGHES concurred in this opinion.

[The decision agrees to by their lordships will be found entire, together with some observations, in another column of the Journal.]

DURHAM COUNTY COAL COMPANY—IMPORTANT DECISION.

BARNETT & THE STOCKTON AND DARLINGTON RAILWAY COMPANY.—We understand that this case, which was an appeal from the Court of Common Pleas to the Exchequer Chamber, has been unanimously affirmed by the whole of the Judges who heard the arguments, and that many thousands of pounds will have to be paid to the plaintiff on behalf of the above company.

BRISTOL AND EXETER RAILWAY—BREACH OF CONTRACT.

COURT OF EXCHEQUER—FEB. 21.

SHARP AND ROBERTS & THE COMPANY.—This was an action brought by Messrs. Sharp, Roberts, and Co., who are extensive locomotive-engine manufacturers, carrying on business at Manchester, to recover the sum of £3751, the balance alleged to be due upon a contract for the sale of five engines supplied by the plaintiffs to the Bristol and Exeter Railway Company in the course of the year 1859. It appeared that the plaintiffs had manufactured ten engines for the Great Western Railway Company, which were delivered in the year 1859. In October, of that year, the defendants agreed with the plaintiffs to furnish them with five engines in the course of the following year, which were to be made on the same general principle as the engines supplied to the Great Western Company. There was a regular specification in the first instance, but it was afterwards agreed that the plaintiffs were to be allowed some discretion, provided the deviations were approved of by Mr. Brunel, the engineer of the company. The price fixed by the contract was £7501 for each engine, and the engines were to be delivered at Liverpool, but it was afterwards agreed they should be delivered at the Paddington station. The specification, amongst other matters, provided that the boilers were to be riveted with copper rivets, but it turned out that they had been riveted with iron instead of copper, and it was contended, on behalf of the defendants, that this was a material deviation from the contract, not assented to by the engineers of the company, and which entitled them to refuse to complete the contract. Four of the engines had been received by the company, and worked for some months, and payments made to the plaintiffs to the amount of £6001, before the deviation was discovered; but, within three or four days after the delivery of the last of the engines, called the Zebra, the defendants discovered what they described as a latent defect, and refused to receive this engine, or to pay the balance remaining unpaid on the other four engines. The plaintiffs did not deny that the substitution of iron rivets for copper was a deviation from the express terms of the original contract, but they insisted that the deviation was an improvement, and that all the ten engines manufactured for the Great Western line, as well as the five manufactured for the defendants, had iron rivets and not copper, from which they asked the jury to infer that the defendants were well acquainted with the facts, but made no objection until all the engines were actually delivered. It was contended, therefore, that the deviation from the original contract was acquiesced in and sanctioned by the defendants.

Lord ALBANY left it to the jury to say if they considered the defendants had accepted the engines, and thereby adopted the deviation from the original contract, by substituting iron for copper rivets—when the jury at once returned a verdict for the plaintiffs to the full amount of their claim, with 501 interest—making in all a sum of £4051.

TYR ADAM, & CO., MINERAL ESTATE.

VICE-CHANCELLOR'S COURT—FEB. 22.

CORREY THOMAS.—This was a motion by a party who was a mortgagee of a colliery under certain lands, called Tyr Adam, Moorsley, and Glendoe, in the county of Monmouth, which had been demised for a term of thirty-one years to the defendants by Sir Charles Morgan. The bill alleged that the colliery and premises were a security for the sum of £20001, the amount of the mortgage, and the motion was for an injunction to restrain the defendants from carrying and selling coals from the colliery, or delivering the coals raised by them to any other persons than the plaintiffs, on the ground that thereby the security of the latter would be wholly taken away.

An offer made by the defendants to pay the £20001 into court upon an assignment of the plaintiffs' mortgage, was not accepted by the plaintiffs, but the latter were willing to permit the working of the colliery to go on, without pressing for the injunction, on payment of the £20001 into court.—The case, if not disposed of by this arrangement, will proceed on a future day.

On Wednesday this case was disposed of, after a long argument for the defendants. The plaintiffs undertook to pay for the coals which should be delivered to them, and to assign their bill by adding Sir C. Morgan, the owner of the freehold in the mines, as a party, and to accept a short notice of motion on his behalf to dissolve the injunction, which was now granted.

LAW OF BANKRUPTCY.

ROSE'S COURT—FEB. 22.

KIRKMAN & ANDREWS.—Lord LANGDALE delivered his judgment upon the plea pleaded by the defendants to the bill filed by the plaintiff, C. F. Kirkman, argued on the 18th inst. (reported in the Journal of last week). It was held down by Lord Langdale, in his Treatise, p. 237, that in general the agreement in plea might be positive, but where the facts relied upon were not within the immediate knowledge of the defendant, he was permitted to make the agreement upon information and belief. "Drewer, Drews," 3 Vesey and Beaumont, 110, was the case of a negative plea, and there did not appear any reported authority of a plea like the present making positive allegations upon information and belief. Rescuer must, therefore, be held to the general principles of equity pleading. Statements upon information and belief in answers had been considered sufficient to put the allegations thus made in issue, and the same principle appeared applicable to pleas. As he thought the agreements in this plea were sufficiently distinct, it must be allowed, but without costs against the plaintiffs, who must have liberty to amend by adding parties.

ALLEGED ILLEGAL COLLECT ON MINERAL SUBSTANCE.

VICE-CHANCELLOR'S COURT—FEB. 21.

THOMAS & JONES.—This case came on for further directions, and a question was made as to the propriety of the verdict of the jury in an action which had been brought by permission of the late Lord Chancellor. His lordship, upon a bill filed by the plaintiff as lessor of certain lands (with a reservation of mines and minerals) against the lessees for an account of minerals taken by them, had ordered the bill to be retained for a year, with liberty to the plaintiff in the meantime to bring such action against the defendants as she might be advised. It appeared that the ground of complaint was, that the defendants had taken from a stream running through their land, and from a pond through which the stream ran, a composition of a valuable nature, which was carried by the stream from Mount Park, where the lessee owned certain estates. This composition had been used by the defendants for the purpose of making water. The plaintiff, in personance of the liberty given by the Lord Chancellor, had brought an action on the case, for injury done to the reversions, and the jury had found a verdict for the plaintiff.

His Honor said, he would read over the pleadings, both at law and in equity, and then give his ruling.

On Friday the case was again brought before the Court, when his Honor granted the injunction prayed for by the bill, and directed an account of a mineral which had been taken by the defendants.

GLENNON.—On Saturday last a great portion of the Cliff-park Cliff, at the western end of the town of Sudbury, fell with such violence as to resemble the shock of an earthquake; it is not what may be termed a headland from an inclined plane, but a vast section fallen from its perpendicular position, preserving a well-defined outline of its various strata. It is a feeding an ample field of research to the lovers of the science of geology; there are also but detached masses in all shapes and positions, many of them resembling gigantic skulls of hewn marble, or even as their own forms. Numerous persons have been to visit the place, many of them searching for petrifications, fossils, and other remains, possibly of the sandstone world.

BARNSLEY IN COWSLAND.—On Thursday morning, the 17th inst., at about half-past eight, a.m., a vibration of the earth, accompanied by a rushing noise, appeared to be the effects of an earthquake, was felt at Barnsley, Penryn, Whitburn, Consett, St. Marys, also in the parish of St. Paul, and in some other places. So great was the motion, that doors in the houses are said to have been thrown open, which created great alarm; but we are happy to say that we have not heard of any serious results.

MINERAL STATISTICS OF PRUSSIA.

The value of the metallurgical production of Prussia for 1859 has been estimated at 28,000,000 dollars, or about 4,500,000,000 francs; but this is considered a great over-estimate, which has been based at rather more than 5,150,000. This industry furnished the means of existence directly to 2,311,000 workmen, or with their families indirectly to 2,389,950 individuals, whose wages amounted to 7,000,000 dollars, or about 1,050,000,000 francs. The proportion of workpeople as thus stated is—

Provinces	Centesimal proportion.	Paid in wages.
Silesia	25	1,644,434 dollars
Prussian Saxony	10	586,735 "
Westphalia	30	1,621,551 "
Rhenish Provinces	45	3,170,685 "
Totals	100	6,993,405 "

In the four other provinces the mineral production is inconsiderable.

Prussia produces iron, copper, lead, silver, zinc, antimony, and quicksilver. The ores extracted represent a total value of 1,001,219 dollars; the pure sterling value of the dollar being 3s. 10½d. In this stage of production 15,416 workmen were employed. The ulterior preparations of the products of the mines and forges raise their value to 14,000,000 dollars, and the elaboration occupies altogether 19,294 workpeople. Of these various products iron is the most important. The extraction of iron ores gives employment to 970 miners, and the ulterior operations of smelting, conversion into bar-iron, sheet-iron, iron rods and wire, and raw steel, employ 16,591 workpeople more—making in the whole 28,081 persons. By these processes and fabrication the value of the raw product is again increased by the extent of more than 11,000,000 dollars. The importance and increase of the production of this metal may be briefly estimated by the following figures. Of raw and smelted iron, made from the ore, not included the current articles of general commerce, the production was in—

1857—1,935,982 quintals, value 3,891,300 dollars.

1859—2,067,059 " " 4,567,318 "

The Prussian quintal being about 110 lbs. Of iron, in the shape of current articles of merchandise, such as bar-iron, sheet-iron, rod and wire iron, and raw steel, fabricated partly from foreign iron imported, the quantities and values were in—

1857—1,518,937 quintals, value 9,860,415 dollars.

1859—2,571,177 " " 11,312,023 "

The increase in the quantity of raw and smelted iron, &c., as between 1857 and 1859, is equal to about 6 per cent., and in the value to 17½. The increase in quantity of the more finished commodity is equal to 19 per cent., and in value to 14½ per cent.

The silver produced in Prussia is extracted from the copper and lead ores; silver ore, properly so called, exist there only in a very inconsiderable quantity. The quantities extracted were in—

1857—23,907 marks, value 328,305 dollars.

1859—24,574 " " 335,518 "

The silver is principally derived from the Mansfeld mines. Their produce a silver, copper, and vitriol of copper rendered, in 1859, to the value of 799,164 dollars. The kingdom of Saxony produces annually about 60,000 marks of silver—nearly twice as much as Prussia. But the value of the production of iron in Prussia is ten or eleven times greater than that of silver in Saxony.

Of lead, in block and oxide of lead, the mines produced in—

1857—34,654 quintals, value 252,533 dollars.

1859—30,689 " " 202,692 "

The working of the lead mines produced, besides glass metal, in—

1857—42,739 quintals, value 149,964 dollars.

1859—58,422 " " value 149,964 dollars.

As this latter quantity contained not less than 24,000 quintals of metallic lead, it will be seen that in reality there was no decrease in the extraction of lead ore. It is with difficulty, however, the lead and manganese of Prussia maintain a competition with those of other countries, and notably those of Spain.—Of copper, the extraction was in—

1857—19,347 quintals, value 647,899 dollars.

1859—19,535 " " 618,069 "

In the eastern provinces of Prussia considerable importations of copper take place from Russia and Sweden. A large portion of the indigenous copper of the district of Merseburg is, on the contrary, exported into the states of the Custom House Union, chiefly for the southern portion of the association.

The greater part of the zinc is produced in the district of Oppeln, and is shipped raw—that is, in blocks or sheets—into England and France by way of Stettin. The fabrication of zinc in sheets has been on the increase. The produce of zinc was in—

1857—215,466 quintals, value 841,905 dollars.

1859—216,366 " " 1,066,727 "

The respective centesimal proportions of values created in 1859 by the extraction and working of the different metals, or metallic products, stood thus—

Iron	79.21
Zinc	7.79
Copper	4.75
Lead	2.59
Silver	2.37
Alum.	1.47
Glass	0.95
Vitriol	0.74
Antimony	0.12—10

MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in many instances, requires cautious investigation—the sanguine expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.]

MINERAL RESOURCES OF SOUTHERN INDIA.—At the meeting of the Royal Asiatic Society, on Saturday last, a paper was read from Lieutenant Newbold, on the mineral resources of Southern India, particularly in reference to the vast resources and riches of the copper mountains; at the conclusion of which Colonel Sykes made some observations on the rich and varied abundance of the former. Gold mines had recently been discovered in the Nellore Mountains, and a gentleman had recently purchased a plantation there through which a gold river ran, whilst many natives were actively employed in collecting it. There had been discovered no fewer than fifty veins of iron ore, which was also found in Assam and the western provinces of India. It was also found in many parts of Tartary, where it was not only mentioned by Marco Polo, but by many early writers; and it had lately also been discovered in Borneo and Malacca, which would, no doubt, give a great additional impulse to steam navigation in the East.

HOUGHALL COLLIERY.—On Thursday afternoon the 6th inst. a large quantity of coal was brought down the Durham and Sunderland Railway, and they are lying on the Town Moor for the inspection of parties interested in the undertaking. The Houghall Colliery is situated about a quarter of a mile to the west of Shildcliffe, at the western extremity of the Durham and Sunderland Railway; and we are happy to state that the coal of which we have seen a specimen, is of excellent quality, which will, it is doubt, be satisfactory not only to the proprietors of this colliery, but also the parties in possession of the adjoining railways. We may also state that a considerable accession of revenue is expected to accrue to the Durham and Sunderland Railway, down the whole length of which the coal will be brought for shipment at their stations on this river (the Wear), should this undertaking prove successful, of which there can now be little or no doubt.—Northern Times.

MINE ACCIDENTS.

Barnes Hill Mine.—On Saturday morning, the 25th inst., at two o'clock, a large quantity of rubbish fell around them, so that they were completely imprisoned; fortunately, however, a boy happened to be passing just at the accident occurred, and gave the alarm to some men who came to their assistance, and after some time they were taken out unhurt.

St. Paul Colliery.—On Saturday last the two main engine-houses of the mine were burnt down, and a considerable quantity of clothes belonging to the miners consumed. The agents being on the spot at the time, the fire was put out, or the boiler, in all probability, would have burst.—On Monday morning, a bad storm of rain fell, and the water in the St. Paul Colliery Mine, got entangled in some part of the engine work, and was so hot that it had in a few hours.

Delishide Mine.—Last week an accident happened to a labourer named Smith, who, while carrying his dinner to the quarry, was struck by a stone, which fractured his skull. The poor man recovered sufficiently to walk to his home, but died the next day.

North Merton Colliery.—As a party met, named Cragg, was about leaving his work, having to go about half a mile, the waggon by which he was going stopped, and the labourer was slipping his foot, his leg was so severely crushed that amputation became necessary, and he died in about six hours.

Coal-Pit Accident at Barnsley.—Four Lives Lost.—On Tuesday morning an explosion of fire-damp took place at the colliery belonging to Messrs. Wood and Co., Barnsley, by which four individuals lost their lives—three males (girls) and a man. Several others, who were seriously injured, are of likely to recover. It is said that the accident was occasioned by one of the men going into a part of the workings with a lighted candle.

PROCEEDINGS OF SCIENTIFIC BODIES.

GEOLOGICAL SOCIETY OF LONDON.

At the usual meeting of this society, on Wednesday evening (Mr. Merriam in the chair), a very interesting paper was read by Professor Owen, on the Mesozoic Remains now exhibiting at the Egyptian Hall, London, which will be found inserted in another column.

INSTITUTION OF CIVIL ENGINEERS.

FEB. 21.—The proceedings of the evening commenced with a discussion upon some portion of Mr. Wilkinson's paper "On Copper Smelting," which was read at the meeting on the 18th inst. A member remarked that his attention had been drawn to the proposition afforded in timber by coal tar, when properly prepared and applied; the experiment had been tried carefully on himself an Indian ship, some portions being coated with vegetable tar, and others with coal tar; the latter had preserved the timber from the worm during a long voyage, while, in many places, the former had failed. He attributed the superior quality of the coal tar to its containing a quantity of sulphur, which, in the process of distillation, which inevitably destroyed animal or vegetable life.—A member had observed at New York, that planks prepared by Kyanizing had been destroyed in the same situation where timber, which had been saturated with coal oil, had resisted the attacks of the termites. The statement of the last speaker was confirmed by a member, who stated that in the Mediterranean, where the ravages of the worm was most extensive, the vessels being rarely covered, were entirely protected by prepared coal tar. The coal tar must, however, be deposited on the timbers, as that substance produced immediate decay in timber. Ammonia might be advantageously used for soaking in porous soil, as it destroyed the vegetable fibre with great rapidity, and produced rich soil.

A paper "On the History and the Plans for its Improvement," by Mr. Thomas was then read.—This subject seems to belong more directly to the architect than the engineer, but in these days the latter class appear to take the lead in completely in all matters of improvement, that they may legitimately lay in claim to a desirable object as the improvement of Holloway Hill. The scheme, after describing the locality and the amount of traffic, and showing the necessity for improvement, demonstrating it by the statistics which come, entered fully upon the various plans proposed for the improvement of the principal thoroughfare in London, from whence it appeared that of present the steepest part of Holloway Hill was at an angle of 1 in 1½, and that by the most conservative plan it was proposed to reduce it to 1 in 2½, which is less than the severity of the Northampton road, at Chesham-bury. An animated discussion ensued, in which the merits of the various plans were carefully examined. The paper was illustrated by a number of drawings, and by models of Mr. Gulliver's and the author's plans.

Geometrical Demonstrations.—In the last sitting of the Académie des Sciences at Paris, M. Elie de Beaumont read a detailed account of what may be called the economy of water springs (fontaines) and the various phenomena. The experiments on which this report is based were made by M. Fournier, at Saignes-de-Luchon, who has it down as a general law, that mineral waters are the result of springs which, after having passed through fissures in the crust of the globe, come up on the surface by a sort of natural Artesian wells. By following up this argument to a series of experiments, M. Fournier has been able to furnish the amount of water in the warm springs of Saignes.

Swampiness at Yvelles.—As a proof of the wonders now accomplished by steam and railways, we may observe, that through our noble packets, running between Glasgow and Liverpool, and Halifax and Boston, and the completion of the railway from the latter to the upper provinces (in which some twenty miles of the spot), it is quite possible to proceed from London to the Falls of Niagara in a fortnight.

GEOLOGY.—A NEW SYSTEM OF PHILOSOPHY.—No. VII.
BY HENRY GRAHAM MONTAGUE, Esq.

PHENOMENA OF THE DESERTS.

Upon the heights of the Pyramids—the barbaric monuments of former ages—the sad memorials of ambition and the withering curse of ignorance—let me stand. Let sentimental tourists and enthusiasts, in high-flown language, feed open-mouthed credulity, or the foolish vanity of man, in speaking of these “Wonders of the World,” far more in every aggregate secured mass—I trace the blood, the sweat, the tears of thousands—in every sound I hear the wretched bondman’s cry reaching to the source: they speak of times when men were demi-savages—when power was as a pestilence, and when life held its frail tenure on a tyrant’s nod. Their kindly occupants are scattered on the desert winds—their pomp of pageantry is gone—their violated sanctuaries tell the cheering tale of RETRIBUTIVE JUSTICE! In ruins still they stand, in mockery of the hills—the libels to humanity—reminding Egypt’s sons of what they truly are—the slaves by birth and habit—the soul-less appendages of a soul-less despot—the fitting occupants of a soil that’s trebly cursed with heat, with pestilence, and vermin.

The basis of Egypt, as is well known to my scientific readers, is one continuous bed of calcareous matter, spreading from thence along the shores of the Red Sea for some hundred miles—similar formations extending on the Arabian side of this sea to its eastern extremity; it consists of a succession of beds of calcareous matter in deposition, variably disposed, and varying in qualities, some of them, more particularly those of Egypt, being somewhat soft, others varying in their degrees of induration, until lost sight of in the form of consolidated rock, the whole being composed of the bodies, aggregates, and decomposed matters of oceanic, animal, and vegetable species, many of which are analogous to those now existing in the Mediterranean and Red Seas, but more particularly in the latter.

The hills which form the natural boundaries of Egypt, and which intersect this vast tract of earth, are, generally speaking, of the like composition and character, as are also the three great chains of mountains running parallel to the Arabian shores, the nature of their phenomena depending throughout on local influences. Many of the lesser hills, rising two hundred feet and upwards, are wholly composed of a species termed *nummulites*, lying in their undisturbed position, as disposed by the living sea within the ocean depths, and analogous to similar formations taking place in the neighbourhood of Masulah, near the entrance of the Red Sea. In the hills of Egypt they preserve their outward semblance through a series of changes, being identified in the chalk, in the calcareous formations, and in clumps, or masses, of nodules of iron and lime; but in the hills at the eastern extremity of Arabia, they pass into jasper rock, or give character to bituminous limestone; sometimes they pass into the state of petrification, and ultimately become Egyptian jasper—sometimes, as near the mountains of Abyssinia, and also in Upper India, they become iron-stone; in the latter localities they at times vary as much as 70 per cent. of iron. Again, they assume the form of marble, and often constitute a great proportion in porphyry and other rocks of a sonorous nature.

I mention the various changes that this particular species undergo, in order to show the inutility—nay, the absolute folly—of generalising, or of confining the operations of Nature to the narrow views of man, for, independent of the changes above enumerated, they pass into a variety of other forms and combinations, as local affections, or the sum of matter aggregated within the living body may determine, nothing being lost to the fossil and mineral kingdom, however decomposed or widely dispersed the body may be.

Other of the hills of Egypt, in localities of these deserts, are composed of compact limestone, of the nature and qualities ascribed to primary limestone, and precisely similar to that of which the vast variety of islands in the Red Sea are composed, being the secreted material of polyplum, inclosing in the growing fabric numerous species of oceanic animals of like composition, the rock being, in this manner, formed beneath the waters, sometimes to the depth of 900 feet, and even more—the bottom of the ocean, near its perpendicular point, being often unfathomable. Of this kind of limestone a vast portion of the crust of the earth is composed, including the extensive formations in the Pacific, Southern, Indian, and Atlantic Oceans, on the whole embracing a geographical range of many thousand square leagues; they are the distinguishing characteristics of oceanic production, being always of simple qualities, and free from compounds, which characterise the presence of terrestrial matters, or the changes produced by atmospheric action in the aggregate while in the state of crystallising. Nature, in this manner, stamps them as her own—as her first and most prominent rocks, and in characters as strongly marked as are the sandstone, the material of which originated in like manner, and are, in their primary nature, entirely free from the clay, felspar, and silica which characterise the red sandstones of England, erroneously termed primary.

This kind of limestone, common to the seas, first developed in virgin soils, and ultimately diffused over the upper crust of the earth, is common to every country, forming hills and chains of mountains, running in direct lines, with a perpendicular front, and being the basis of vast tracts; thus it enters largely into the composition of the plains of the United States, of Canada, of South America, of Europe, Asia, and Africa, and of Australia, its general character being precisely the same, although formed from the commingled atomic quantities of species, of habit, character, and construction widely differing from each other. In Egypt, as in the seas, these rocks seldom contain any number of fossils, but their nature and origin is engraven thereon in the still recognised clumps of nummulites, and other recognised oceanic species; but as the rocks become more crystalline, so the last traces of animal organisation eventually disappear.

It is surprising that even some of our most eminent chemists, who are the only true pillars of philosophy in the present day, should still entertain the idea that these rocks must have been subjected to the heat of fusion, in order to obliterate all traces of organic remains, knowing well that decomposition is a necessary consequence under certain influences, as is exemplified in vegetable soils; and, again, the perpendicular faces of hill chains, unbroken to the view, the bold and geometrically marked outline of these hills, their general assumed direction, the undisturbed state of the beds on which they severally rest, their perfect freedom from rocks of more complex nature, and their affinity to the strata uniting with them, all demonstrate the absolute impossibility of their having, at any previous period, been subjected to the heat of fusion; but here the chemist requires other proof, let him make personal observation in those parts of the earth where the causes of effects produced are self manifest. In the ocean these rocks are formed by the simple cohesion of parts, induced by chemical affinity; but when these rocks become exposed to intense atmospheric action, the electro-chemical phenomena cause the atomic particles to assume the crystalline structure.

That the agency of heat is necessary for the production of crystalline rocks is a truth not to be disputed, but the heat produced by volcanic action is vastly different in its qualities to the heat produced by volcanic action; the hardest, the most crystalline, and beautiful rocks and stones, are manifestly the results of long-continued atmospheric action, and, as is equally manifest, in localities only; it is true, porphyries are occasionally found in the interior beds, but their forming the underlying strata does not demonstrate that, in this position, or under local influences, at present manifest, the result was produced; and an over-zealous geologist of this, as to be under the necessity of admitting the axiom I now lay down, or to invent causes proceeding from the interior of the earth. The electro-chemical phenomena naturally accompany atmospheric action, the electric fluid being developed in its local quantities, and diffused in local portions of the atmospheric medium; but such does not of necessity follow in volcanic heat, although, but in a less degree, such may be the case; but to give this extent of quality to the latter, or, as geologists attempt to give it superior qualities, we must have further evidence in the production of crystalline clays and silicious bodies, and such as are at present observable only in the superficial soils, or shallow streams, of tropical lands.

But, after all, the question with the philosopher inquirer is, not whether such rocks have been produced from beneath—and whether they have been acted upon by internal fire, or by external atmospheric heat and electricity, but “What is the composition, and from whence is derived the material of which the stratum is composed?” To this the chemist must adhere, and to this the geologist—whether he likes it or not—must conform. Besides the limestone, as above stated, there are other varieties locally disposed through the great range under immediate review, formed and formed, as local affections determine; thus, to form marble, heat and limestone are requisite, and thus, where marble is developed in the deserts, there is sure to be water in its immediate vicinity; the presence of hydro-

gen is also necessary to the production of *serpentine*, but, as is manifest in many of the hills of Upper Egypt, heat alone is necessary, for the soft carbonate of lime gradually indurates on exposure to the atmosphere alone, in those parts where the rains seldom, or never, fall, and the soft carbonate of lime is produced by the oxidation of the animal bodies secreting lime, as is manifest every step we take, from the disposition of the atomic particles of bodies with the elements around them, the result invariably proceeds.

Many of the hill ranges in the heart of the deserts have a striking analogy to the recent formations on the coast of the Red Sea, being a continuous chain of calcareous matter, the perpendicular front marking the action of the waters, the upper surface terminating in a plain of considerable extent, its surface presenting the like phenomena; in the plains beneath are smaller conical-shaped hills, composed of miscellaneous material; beds of pearl oysters, the upper surface of which has become oxidized of iron and lime; the lower portion, and those buried in the loose dry sands, still retaining their primary form and qualities—aggregates of an indeterminate character between granite and sandstone—in which are numerous crystalline accretions of sulphate of iron—beds gradually assuming a lamellated stratum, the fossils passing gradually through the thin disintegrated stratum which separates them from each other, and resting upon the more consolidated stratum beneath, and thus presenting alternate layers of fossil bodies, and decomposed, or decomposing, masses analogous to some of the stratified chalks of this country.

To me, an unwelcome intruder in the walks of science, and a total stranger to its disciples, it appears somewhat remarkable that so wide a field of observation, where Nature, in her virgin purity, invites man to observation—where the multifarious phenomena, and manifest changes, on all sides, formerly gave rise to so many beautiful allegories of the ancient Greeks and Egyptians—should have been hitherto neglected and unexplored by modern geologists; although even here, I doubt whether the theorist would not find straw to hang his theory upon, and to furnish material for his day dream, discovering plutonic rocks in every crystalline aggregate, vegetable earths in oceanic marble, and awful catastrophes in every fissure and mouldering fragment; still I doubt not that even the talented Sir John Hall would be somewhat surprised to find that Nature acts diametrically opposed to his ideas of crystallisation; that, so far from being governed by the force of lateral pressure, she testifies, that the more freedom of action is manifest in the atomic particles of aggregates in their decomposed state—that is to say, the less lateral pressure it is subjected to, the clearer, the larger, and the more defined, are the crystals, and the more beautiful the result; that in a disintegrated mass, however great its bulk, where the electro-chemical action is equally manifest in all the atomic particles of which the body is composed, there is no such effect as lateral pressure, as is testified by the expansion of each atomic particle, and adhesion consequent on this expansion.

The hills bounding Upper Egypt, as before observed, are of soft carbonate of lime, and the ancient Egyptians, availing themselves of this fact, converted them into receptacles for their dead, and also drew largely upon them for their palaces and temples. When excavated, the material preserves its whiteness for a very great period of time, and thus, especially when slightly polished, it may be readily mistaken for marble, and such, I presume, occasioned the misconception of Diodorus, who relates that the causeway so celebrated in his times was paved with marble, whereas it is, in reality, the limestone common to the country, and the same as that of which the pyramids are built, becoming very hard, and losing its whiteness in the process of time; and, where exposed to the action of the waters of the Nile, it soon assumes the crystalline texture.

The catcombs, some of which enter the very bowels of the hills, afford excellent opportunities of evidencing the composition of these hills, which is, in general, of the nature above described; such is the great tomb in the valley Bah at Mohk, discovered by B. Ismail, the inner chamber being still in its simple state of Nature, soft, and yielding to the scratch of the finger-nail, as is evidenced by the many marks of had taste left upon its walls; the remainder of the tomb is, however, hidden by a thin coating of cement, composed of the like substance, and the rejected material has become exceeding hard and brittle, resembling alabaster in composition and fracture. The other tombs which have been freely exposed to the atmosphere, or have been converted into residences of the living, have become exceedingly hard, some of them partaking of the nature of rock jasper. The softness of this material when in the bosom of the mountains, directs the contemplative mind of much of the surprise the first sight of those barbarous masses, the Pyramids, gives rise to, and also accounts for the extreme affinity with which the stones are fitted to each other—the hills furnishing the material, and, in some cases, entering within the building itself, and its exceeding softness rendering the labour of fashioning it very easy. In the cavernous entrance of some of these tombs, the whole interior has become incrustated with a beautiful coating of common quartz, of small crystalline texture, and attached to the matrix, which is an admixture of lime and sandstone; at the base of the quartz this material has assumed a lamellated texture, much harder, indeed, than the main body, and, in appearance, much resembling deposits formed gradually in trunks of pumps, the crystalline accretion covering the inner walls, so as even to obliterate the chisel marks, which are sometimes often to be traced through the clear crystalline medium. Again, in some of these catcombs, particularly where in the immediate vicinity of the Nile, large stalactites are suspended from the roofs, the same being also observed coursing the perpendicular cliffs suspended over the waters, and having the appearance of a running stream. In some of the chambers these phenomena vary; the matrix of the hills is the like soft limestone, but the larger nodules, which enter its composition in great numbers, are, from their greater quantity of bituminous matter, converted, or in the act of conversion, into CHALK; this gradual change is strikingly manifest in products, *crinoides*, &c., and is exhibited also in those caverns incrustated with quartz, the operations of the imbedded body, and the matrix, evidently proceeding in their individual change, without reference to each other; thus the medium (for it is evidently entire animals) may be readily detached from the bed in all their various stages of transformation, until, in fact, the whole becomes one mass of chalk, soft, and yielding to the touch, and readily separable in its parts, the external figure of the organic body alone remaining to identify its species.

But another and more beautiful change awaits the organic body; the hills, losing their softness of parts, very often assume, and become masses are thus spread over the plains; it is then the hitherto imprisoned fossils become scattered abroad, and thus the chalk nodules, as above stated, become the subject of intense atmospheric heat, with little moisture; under these influences it gradually hardens, and becomes a petrification, similar in appearance to that which is familiarly known as the Turkey stone; from this state it gradually advances towards the crystalline, and, when perfect as a result, it is known as EGYPTIAN JASPER; and it is admirable to find, that, so in the state of chalk, the internal organisation of the animal appears to be wholly destroyed in this minute decomposition and re-modification of atomic quantities; so in the perfect result, as jasper, the internal texture, and almost all its original substance, is now more strikingly developed, even to the crystalline attached to it while in its living state. This is a beautiful exemplification of the changes to which all organic bodies are, of necessity, subject, when life has departed; the change of oceanic animal bodies, of like nature with the above, is far from being uncommon in England, as exemplified in the arrow stones found in sandstones and limestones; and Mr. Phillips explains the phenomena by stating, that the animal substance has been carried away by water, the cavity left in the rock bearing the impression of the exterior of the shell, or coral, and in this cavity is a mould, or cast, of the interior; but, independent of the phenomena observable in the lime and sandstone of Egypt, there are other remains which determine against this explanation; the position of the fossil, and the impression on the rock in which it is imbedded, demonstrates that it was in situ previous to the reformation of lime or sand consolidating—that if in the limestone, previous to its consolidating, an infiltration could have carried the animal matter away, inasmuch as its elements simulate with the incoming matrix, and no infiltration could possibly take place after the aggregate mass became indurated. Again, the very nature of the rock negates this double infiltration, and the last, and by far, weightiest argument is, that transition in, in all things, consistent with Nature.

Every organic and inorganic body is like the subject of incessant change, being vitified and influenced in its motions, and the disposition of its atomic particles by chemical action, induced by moving causes, inwardly and outwardly available, their chemical relations commencing with the cohesion of the living matter; thus, the living creature of the deep

runs through the brief and fleeting moments of its existence in one continued series of changes, until “the silver cord is broken,” but the body remains, its atomic particles being now favourably disposed to receive new influences, and to chemically unite, the nature of these influences which determine its after changes, some shall tell, the same depending on the changes of union of principles and compounds, brought together by local action. Notwithstanding the mineral kingdom, affinity, hitherto subservient to the living action, is now governed by the electric influence, or is overruled by the force of cohesion, and the passive subject of action, may become as one, with limestone, clay, marl, or bitumen; it may remain an isolated product, or it may be scattered through the earth or waters, or, passing through some other organic body, it may assist in giving quantity or quality to that body. Good and evil are ever the conditions which regulate life.

Was this nodule of chalk abstracted from the desert hills, and exposed to the influence of the atmosphere, in the rich vegetable soils of localities of Upper India, instead of Egyptian jasper, it would be converted ultimately into white opal. Was the hill itself removed to the latitude and influence of England, the disintegrated mass of matter, receiving carbonate acid from terrestrial vegetable matters, would become, perchance, chalk, and the chalk nodules would become jasper. The process of change is beautifully exemplified in the ORIENTAL JASPER; this gem, while in the bowels of the earth, is a worthless unadorned aggregate, holding lightly together in its parts, and breaking readily, with a rough uneven fracture. Chance of circumstance exposes it in this state to atmospheric action, and the nature of the action determines the nature of the result; on the surface of the soil a series of changes take place, its atomic parts become more united, and, if broken in this course of change, it is still found to contain numerous minute cells, filled with magnesian or some other earth; in process of time the siliceous acid embraces these cellular cavities, uniting them with the rest, which are thus preserved in their several changes of decomposition and re-combination, giving variety and beauty to the gem. If the like nodule be exposed to the conjoint action of the sea and waters, as manifest in the Benue, Godaverry, and other rivers, the nature of the conjoint action determines the result, producing AGATES OF VARIOUS KINDS.

Again, the carnelian is also a beautiful illustration of change. This beautiful gem is well known to all my readers; it embraces every colour, from the pale fine yellow of sulphur to the deepest crimson; its opacity varies from the dull and coarse texture common to other stones, to the exquisite fineness of garnet. But what is it in its state of Nature, before it is dragged to the light of day? A dull, worthless, flinty substance, similar to the agate, previously described, varying in its colour, and, sometimes, in its material. The ignorant natives of India, who is no geologist—who knows not what philosophy means—but, simply excited by his cupidity alone, abstracts the worthless stone from the earth, and, placing it on some elevated spot, suffers it to remain on the surface of the earth for three years, at the expiration of which period he hails the stone for several hours, in order to expedite the result, and to check its further change; in the cutting we acknowledge CARNELIAN, one of the most becoming and beautiful ornaments of the female sex, although, from its abundance, but held in light esteem. Again, to anticipate the slow operation of natural causes, these uncultivated people inclose the unripe stones in a vessel of earth, and, in this state, expose it to artificial heat; thus, in a few days the like result is obtained. In all this Nature shows the preceptor, as to other important discoveries, for man, at best, is but an imitative animal. Many such like instances of change I could enumerate here, but, for the present, I must retrace my steps to Egypt.

The valleys and plains of the Desert are, in some localities, literally covered with fossil and petrified bodies; some contain beds of *testacea*, which have evidently been suddenly and simultaneously destroyed by the retirement of the main body of the waters, and the exsorption of those left behind, the saline products preserving the fish from complete decomposition, and in this state they have gradually become converted, or are in the act of conversion, into EGYPTIAN JASPER. In some of the valleys the phosphate of magnesia given forth from these bodies, covers them with a bloom like that on the grape or plum. Many of these fish are perfect enough to identify species common to the Red Sea, and the glorious colours with which they were arrayed during life are still manifest in some specimens; in general, however, the intense energy of action manifest in these localities causes expansion and separation of parts of the larger aggregates, and thus stones are formed, of every size and variety.

Scattered over the surface of the earth are numerous organic bodies, aggregates, and relics of bodies converted into stone, the shell-bearing animals of more consolidated texture, and even *schizomela*, turtles eggs, and other fragile bodies, preserving their exact outline of form, although, in all of them, the protuberances have fallen away in the progress of change. Mr. Phillips says—“No one acquainted with the structure of invertebrate animals can view them in their crusts, shells, and other hard appendages in the fossil state, without being struck, on the one hand, with the wonderful perfection of all their minutest aggregation, and, in the other, in the uniform and almost total absence of the soft parts, which have almost uniformly disappeared.” It is true that, in numerous aggregates, the fleshy matter, and also the consolidated structure, has disappeared, but, in the phenomena now before us, it is the soft parts alone that are converted into silica, the atomic particles of animal matter chemically uniting with the oxygen of the atmosphere, increasing thereby in specific gravity, as they become more silicified, or as the elements of the carbon assume the form of silica, and embrace, in their elastic medium, the several earths which formed the solid structure of the body, without displacement of the atomic particles; and, even where the albumen and gelatine have disappeared from the body, they are still in and throughout the soil, although lost to view in their new combinations. The progress of petrification in these localities is, indeed, exceedingly slow, but the change is simultaneous throughout the body, its increase being manifest by increase of weight, or density of structure, for in no instance does it enlarge its size, neither does it change its atomic quantities, the same being demonstrable on microscopic observation. The porphyry nodules, in the petrifying ponds, and which, by travellers, have been often mistaken for trunks of trees, petrify in their stony walls, the siliceous acid leaving the cells in that state which was previously unoccupied; and, again, the shell fish which have previously lost their fleshy substance, uniting with the vicinity soil, manifest, unless, which is often the case, it is covered with other material. Sometimes, small clumps of animal and vegetable remains accrete together in a conical form of lime and silica, and, in the action manifest, the whole are enveloped in the common siliceous base, being one perfect result, as *ROSE JASPER*, which, although rare in Europe, abounds in some localities of the Desert.

THE DEAD SEA.—At the Paris Academy of Sciences, on the 1st inst., M. Arago read a communication from M. Haug, a German geologist, on certain geological observations, made in order to ascertain the relative altitudes of the Dead Sea in Palestine and the Mediterranean, from which it appeared not only that the surface of the Dead Sea was 219 toises, or 4,913 English feet lower than that of the Mediterranean, but also, from the geological phenomena observed on its shores, that the formation of the basin in which it lies was antecedent to all historic epochs; hence the supposition that the sea was formed by the sinking of the plain on which the cities of the Pentapolis (Sodom, Gomorrah, &c.) were situated, is incorrect. M. Arago added that the observations of M. Bertram, a French engineer, made the depression of the Dead Sea below the Mediterranean 419 toises, or 1,374 English feet.

THE ICHTHYOSAURUS.—The remains of a gigantic ichthyosaurus have been discovered on the domain of Castle Bore, belonging to Duke Maximilian, in Bavaria. To judge from the size of the head the animal must, at the lowest calculation, have measured 324 feet in length. It lies in a formation of lime marl. One of the ribs is three feet long and two broad; the both are of a conical shape, whereas it differs entirely from the Ichthyosaurus *Plesiosaurus*; they are slightly bent towards and backwards, and similar to those of the *crocodile* of the Nile. The skeleton of this ichthyosaurus is complete, which is not yet entirely cleared from the earth in which it is imbedded, with, it is supposed, several other discoveries since those hitherto discovered. It is proposed to call it, according to analogy, *Ichthyosaurus Trigonodon*, in contradistinction to the Ichthyosaurus *Plesiosaurus* and *Camarosaurus*.—A splendid organic specimen of the Ichthyosaurus *Camarosaurus* has recently been found in the magnesian limestone strata in the East Cliffs, at Whitby. The fossil is thirteen feet long, and perfect in every part; it is considered the finest specimen of this wonderful animal ever discovered in this part of the country.

MEETINGS OF SCIENTIFIC BODIES.
IN THE ENGLISH WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOUR.
Royal Botanical	Regent's-park	Saturday	4 P.M.
Royal Geographical	Waterloo-place	Monday	8 P.M.
British Architects	15, Grosvenor-street	Monday	8 P.M.
Medical	Ball-court, Fleet-street	Monday	8 P.M.
Linnean	Room, square	Tuesday	8 P.M.
Horological	21, Regent-street	Tuesday	8 P.M.
Royal Medical and Chir.	53, Berners-street	Tuesday	8 P.M.
Civil Engineers	26, Great George-street	Tuesday	8 P.M.
Chemical	47, Leicester-square	Tuesday	8 P.M.
Society of Arts	Adelphi	Wednesday	7 P.M.
Zoological	37, Pall-mall	Thursday	8 P.M.
Royal	Somerset House	Thursday	8 P.M.
Antiquaries	Somerset House	Thursday	8 P.M.
Royal Institution	Albemarle-street	Thursday	8 P.M.
Scientific	30, Bedford-street, Cav.	Friday	8 P.M.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.
Westminster Medical	Kewer Hall	Saturday	8 P.M.
Mathematical	Cripton-street, Spitalfields	Saturday	8 P.M.

* The series of the President of the Geological Society (R. I. Murchison, Esq.) are announced to commence at his residence in Belgrave-square, this evening (Saturday, the 26th inst.)

PUBLIC COMPANIES.

COMPANY.	MEETING.	PLACE.	DAY.	HOUR.
London & South Western Railway	Nine Elms, Vauxhall	Feb. 26	1	
North Midland Railway	Leeds Station	26	1	
Hayle Railway Company	Rectory House, London-wall	26	1	
Hall and Surby Railway	Town Hall, Kingston-upon-Hull	26	12	
Hungerford & Lambeth Rwy. Bds.	Villiers-street, Strand	26	2	
London and Blackwall Railway	London Tavern	26	11-12	
London Grand Junction Railway	6, Basinghall-street	26	1	
Sheffield and Manchester Railway	Albion Hotel, Manchester	26	1	
Durham and Sunderland Railway	Sunderland	26	12	
Dublin, Limerick, &c. Railway	Port Cawli	26	12	
Arigna Iron and Coal Co.	Office, 9, Liverpool-street	March	1	
Thames Tunnel	London Tavern	1	1	
West Cork Mining Company	George and Vulture Tavern	1	1	
Great North of England Railway	Darlington	1	12	
London and Westminster Bank	Bank, Lombard-st.	2	1	
Bedfordshire Consolidated Mining Co.	Office, 44, Finsbury-square	2	1	
Great Eastern Railway	George and Vulture Tavern	2	12	
Bristol and Exeter Railway	Bristol	2	12	
Imperial Brazilian Mining Ass'n.	London Tavern	3	2	
Dublin and Limerick Railway	Dublin	3	2	
United General Gas Light Co.	8, Abchurch-lane	3	1	
Rock Life Assurance Company	New London Hotel, Bridge-street	9	12	
West London Railway	11, Abchurch-lane	10	1	
London and Croydon Railway	London Tavern	10	1	
London Bank	11, Abchurch-lane	14	1	
Stones Bridge Mining Association	George and Vulture Tavern	17	1	

GAS.

COMPANY.	MEETING.	PLACE.	DAY.	HOUR.
De Donsville Mining Co.	16a, March	26, Birch-lane		
Bedfordshire Consolidated Mining Co.	Office, 44, Finsbury-square			
East Tynemouth Mining Co.	14, 25, St. Mildred's-court			
Northern Coal Mining Company	19, Newcastle Joint-Stock Bank			
Miners' Company	16a, April 15	15, City and Co., or office		
Irish Waste Land Im. Society	15, 18, As former calls			
Cambrian Iron & Steel Co.	24, 17, As former calls			

DIVIDENDS.

COMPANY.	DIVIDEND.	PLACE.	DAY.	HOUR.
British Colonial Bk. & Loan Co.	4 per cent.	13, St. Within's-lane	March 7	

NOTICES TO CORRESPONDENTS.

STATISTICS OF THE IRISH TRADE.—We are indebted to several correspondents for information connected with the various districts, and our tabular matter is, we believe, now perfect. It shall certainly appear in our next.

F. W. (Bedford).—The paper, on a New Plan for Raising and Lowering Miners, referred to by our correspondent as being worth extracting from the last Number of the Journal of the Franklin Institute, is copied verbatim from our Journal of the 26th inst.

THE BURN LANE INVESTMENT.—We have received a communication from "J. J." in reference to the inquiry, "R." in our last, but, as we intend adopting his suggestion, and reprint the paper, the insertion of his letter is rendered unnecessary. Mr. LUTHERMAN's paper, we may, however observe, is styled "On the subject of a Safety Lamp for Miners," and appeared in No. III., vol. IV. of the Mining Review, published in March, 1868.

DURHAM COUNTY COAL COMPANY.—The report of the proceedings at the half-yearly general meeting held on Thursday last, reached us too late for insertion. It will appear in our next.

E. W. B. (Manchester).—We shall feel pleasure in complying with the request of our correspondent as frequently as an opportunity is afforded.

MINES REVIEW.—We have received a long letter from "A Cornish Miner," but have not room, at present, for its insertion. Indeed, we are almost inclined to agree with the point raised by our correspondent—Are not these questions too complicated for a newspaper? We will, endeavor, however, to find space for this in a week or two, but must press on our correspondents the necessity of compressing as much as possible the communications they may forward on this subject.

H. M. (Newcastle).—The Polytechnic Institution, Regent-street, London.

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, FEBRUARY 26, 1842.

The judgment of the House of Lords in the appeal from the decree of the Lord Chancellor of Ireland, in the case of the West Cork Mining Company, however warranted by the legal technicalities to which Lord COTTENHAM directed attention in delivering the judgment, cannot be received otherwise by the shareholders and the public than as being in direct contravention of all honesty and justice—so far as moral equity is considered in treating the fraudulent transactions which have given rise to the proceedings on which an appeal to the House of Lords was made. To afford a comprehensive view of this case, on which their Lordships have delivered their judgment confirmatory of the decree of Lord PLUNKETT, we deem it necessary briefly to narrate the facts and circumstances, stripped of their forensic vesture, and to display them in all their naked deformity, so as to exhibit the injustice done to the shareholders by the decree which has now been irrevocably confirmed by the decision at which the House of Lords has arrived.

The appeal, it will be seen, was referred to the three law lords—viz., Lords COTTENHAM, BROUGHAM, and the Earl of DEVON, and the judgment appears to be given with reference to the omission, or errors, in the legal proceedings, on which technical objections arose, rather than the equity of the case—thus affording another illustration of the "glorious uncertainty of the law," for, we believe, had the respondent been placed at the bar of a criminal court, there could be no question as to the verdict of twelve honest men as jurors, unimpeded to elicit "the whole truth, and nothing but the truth," or the judgment of the learned Judge who might preside—while, from want of legal acumen and tact on the part of the appellant (as we are led to suppose, from the terms in which the judgment is given), the law or equity of the case, in a civil court, is propounded as being in favour of the party who perpetrated the fraud, and who, therefore, not only escapes punishment, but has an award in his favour, by which those who have been already victimized to the amount of 300,000, paid up in full, are called upon to pay a further sum of 30,000, to 100,000. We will, however, proceed to the case, and reserve our comments until it is fairly placed before our readers, most of whom, we believe, are well conversant with its main features.

In the year 1834, the late Lord AUDLEY, possessing certain mineral property in Ireland, which had been worked by the Mining Company of Ireland, but abandoned by that company after a large expenditure, and who, in addition to which, had advanced his Lordship some 50000, or 100,000, on mortgage of the estates (of course, comprehending the royalties, or mineral rents), employed one JOSEPH PIKE, formerly a banker at Watford, where he failed, having paid in, in the 11. to his creditors, but, at that time, an agent, clerical and scholar, and disreputable of bills in Peter-monger-row and King's Arms-buildings, in this city, to form a company in London, with the object of working his mines. JOSEPH PIKE, having associated himself with Mr. JOHN DAVIS, of Talacre-motory, and some other worthless, proceeded to establish a company for working the property, with a capital of 100,000, such sum being the amount agreed to be paid Lord AUDLEY for the

mines, by him JOSEPH PIKE, as agent to his Lordship, and in the further capacity of self-nominated managing director of the company, and thus leaving no available capital for working them. The company was formed, with 3300 shares of 500 each, one-third of which, or 55,0000, was accepted by Lord AUDLEY in part payment, the remainder being payable in cash. To carry out this project, however, it was necessary that he, JOSEPH PIKE, the conductor of the scheme, or fraud (for such, in fact, it was, the representations made being grossly delusive), should divide the spoil (he taking some 25,0000, to his own share) with certain of the directors, nominated by him, and accordingly fifteen shares, or 7500, were duly transferred to each of the seven respective parties nominated as the original directors, to qualify them for holding office, and thus a veil was thrown over the transaction, and the fraud practised clouded in obscurity.

The company thus formed, with a set of directors nominated and qualified by Lord AUDLEY, or his agent, JOSEPH PIKE, reports were prepared, and submitted to the proprietors—dividends were declared out of the capital, and not the profits of the company—and the shares sold, in some cases, at premiums; the most gross misrepresentations were made as to the value of the ores of copper and manganese, which were said to be inexhaustible, and the El Dorado of Ballydehob could only be outshone by that of Llanassa—the riches of the mineral deposits were, to justify the ancient name given to the village contiguous, that of Ballydehob, or "the town of gold," and the fortunes of the fortunate shareholders were at once to be realised through JOSEPH PIKE and his confederates, by an English company, after the sacrifice of thousands by parties in Ireland, who were willing to, and actually did, reassign the property to Lord AUDLEY for a nominal consideration, and for which 165,0000, was exacted from the West Cork Mining Company. Things went thus on until the *exposé* which appeared in our columns, and it was only after many months that the eyes of the proprietors were opened to the fraud which had been practised on them—JOSEPH PIKE, the agent of Lord AUDLEY, who pocketed some, if not a large portion, of the spoil, being the managing director of the company, and thereby acting in the double capacity of vendor and purchaser.

On an investigation having been entered into, arising out of the remarks made in our columns, certain proceedings were taken by the independent shareholders, comprising an influential body of mercantile men, who had suffered themselves to be duped, and after several meetings having taken place, JOSEPH PIKE and his confederates were ejected from office, and legal proceedings instituted for the protection of the interests of the shareholders—a course indispensably necessary, to prevent a further wasteful application of the funds of the company. In the year 1837 the late Lord AUDLEY died, having nominated JOSEPH PIKE, who had done his work so well, as executor to the estate and guardian (!) to his children; and, in this capacity, being armed with a power which rendered his position totally distinct from that in which he was formerly placed as agent for Lord AUDLEY, and managing director of the West Cork Mining Company, he instituted proceedings against the company, calling on them to pay over to the estate the sum of 55,0000, or thereabouts, being the balance claimed as due to Lord AUDLEY on account of the purchase-money—55,0000, having been paid in money, and a like amount in 1100 shares of 500 each. This bill, filed in the Irish court, was amended, by the proceedings being instituted against W. R. VIGERS, Esq. (one of the directors), as the nominal defendant, on behalf of the company, under the clause of the Acts of Parliament, which prescribes the mode in which all actions shall be brought, and was met by that gentleman (in his capacity as director) by a cross bill, praying that the bill in which JOSEPH PIKE was party as plaintiff should be struck off the file; and, further (as we understand the object of the bill), that the agreement for the purchase of the mines should be declared null and void, on the ground of fraud and collusion, and that the company should have a lien on the property for the sums advanced by them, or be repaid the amount abstracted, under the fraudulent representation of which complaint was made. These bills having been brought before Lord PLUNKETT, then Lord Chancellor of Ireland, and argued in court, the decree of his Lordship was in favour of JOSEPH PIKE, as executor of Lord AUDLEY, thereby declaring that the balance of the purchase-money (55,0000), with interest thereon, and costs of suit, should be paid by the company; and, further, that the cross bill filed by W. R. VIGERS, Esq., on behalf of the company, should be struck off the file, but without costs. A decree of this nature, so subversive of all justice, was made subject of appeal to the House of Lords, which, having been argued the session before last (two years and a half ago), the judgment of their Lordships has been this week delivered, and which will be found subjoined.

We might, by way of parenthesis, observe that, during these proceedings, or rather in the early stages of the *exposé* being made by us, we were subjected to legal proceedings for libel, instituted by JOSEPH PIKE, which, after being protracted as long as the law would allow, without the case being brought into court, ended in the nonsuit of the plaintiff, JOSEPH PIKE being subsequently arrested for the costs, and placed in "duress vile." It is worthy of remark here to mention, that SOLARI, of Eschequer Hill notoriety, and GREEN, his lawyer—RAPALLO, whose name has lately been before the public—and DAVIS, of Talacre celebrity, were associates of PIKE, whose connection with this and other companies, as well as "private adventures," have rendered him so notorious.

From this brief narrative, it will be seen that JOSEPH PIKE, the executor of Lord AUDLEY, in whose favour the judgment of the House of Lords is pronounced, is the same JOSEPH PIKE as the agent of Lord AUDLEY in the formation of the company, and who nominated himself, and acted as the managing director of the company so formed by him, that 165,0000, was charged for a property (!) which had been repudiated by the Mining Company of Ireland, after an outlay of many thousands—that false reports were presented to the proprietors, whilst others were carefully concealed—fallacious representations made as to the produce of the mines, and dividends declared out of the capital, but represented as arising from the profits—that proceedings were instituted in England by Mr. VIGERS and others in the year 1836, to annul the fraudulent contract entered into, and to which Lord AUDLEY, JOSEPH PIKE, and the other original directors, were made parties as defendants (which has not yet come on for hearing)—that JOSEPH PIKE, on Lord AUDLEY's demise, filed a bill in his capacity as executor—a cross bill, distinct from the proceedings in England, was thereupon filed—a decree given in favour of JOSEPH PIKE—an appeal to the House of Lords, and the judgment, whereby the company are to be further molested of 55,0000, with interest (at least 15,0000)—and, we should suppose, 30,0000, will hardly cover costs.

We now come to the consideration of the judgment. Lord COTTENHAM, it will be observed, after some remarks on the nature of the pleadings, and the manner in which the case had been treated, adverts to the proceedings of PIKE, as executor of Lord AUDLEY, against the several members of the company, which error was afterwards corrected by making W. R. VIGERS, Esq., the nominal defendant, as managing director, in compliance with the provisions of the third clause of the Act of Parliament—the cross bill being subsequently filed by W. R. VIGERS in such capacity. His Lordship proceeds to lay down, as the basis of the judgment about being delivered, that such judgment must be held to apply to "the company"—the object of proceedings at law or in equity being carried on in the name of the managing director, being only that of removing difficulty in litigation. Having pointed out that the proceedings, although carried

on in the name of the managing director, must be considered as the acts of "the company," his Lordship thus proceeds—

The question is not whether individuals who purchased shares in the company, and so became members of it, may, or may not, have had ground for complaint in that, it would be out of place to express any opinion, but whether the facts alleged and proved entitle "the company," as such, to any part of the relief prayed.

Here, it will be observed, that the first legal technical objection, or quibble, is raised, inasmuch that, although W. R. VIGERS, in his individual capacity, has been prejudiced by the acts of JOSEPH PIKE and others, yet representing "the company," and PIKE being a shareholder, he is, in fact, praying relief, not only for himself but for the defendant and others—ergo, he has no *locus standi* in his position as managing director, however he might have one as an individual shareholder. In further confirmation of the view taken by his Lordship as to the nature of the proceedings instituted, he thus expresses himself—

If any individual were deceived by any misrepresentation of the persons as constituting and calling themselves trustees of the West Cork Mining Company, a case might exist entitling such individuals to be personally relieved against the consequences of such misrepresentations, but "the company" itself cannot have any title to relief, founded upon their own misrepresentations.

Lord COTTENHAM, in continuation, adds that, in his opinion, the deed and prospectus, however, contain no such misrepresentations as would afford to "any one equitable ground for relief at this time"—an opinion which can only be founded on some other legal quibble, or a total ignorance of facts, which, after two years and a half consideration, can hardly be contemplated, for it is notorious, out of the House of Lords, whatever may be the opinions therein entertained, that a gross fraud was practised, and that the prospectus and reports were fallacious—while the twofold capacity in which JOSEPH PIKE acted, with the circumstance of the large sum taken as purchase-money, when contrasted with the report of Mr. ADAM MURRAY, and the act of the Mining Company of Ireland, on giving it up for a nominal consideration, would, we should have thought, at least, have rendered it a case of suspicion, and, therefore, not justify the opinions expressed by the learned Lord. Again, we find, in referring to the nature of the proceedings on the part of Mr. VIGERS, Lord COTTENHAM directs especial attention to the circumstance of the suit not being "properly framed," inasmuch that "the company," through Mr. VIGERS, are claiming relief as against themselves, while a portion of their body may (as is alleged by the bill in question) be precluded from the relief sought, by their conduct in the original transaction; and, in further illustration of this view of the case, states distinctly that the only redress which could be obtained was on the part of the innocent portion of the shareholders, who were no parties to the misrepresentations made, against those of "the company," and others lending themselves to the fraud.

It will be observed, in the course of the judgment, that Lord COTTENHAM refers to the proceedings instituted in the English Court of Chancery in October, 1836, in which VIGERS and TIMMINS (if we recollect aright) proceeded, on behalf of themselves and other members of the company, against Lord AUDLEY, including in the suit, as defendants, JOSEPH PIKE and the other directors who had been parties to the fraud, which his Lordship stated was totally distinct from that now under consideration, and on which, as still pending, he would offer no opinion, except that it was not open to the observations which applied to the present case, but "was one of a totally different character." It is unnecessary to follow the learned Lord through the arguments on which his decision is based, which, it must be admitted, as against "the company," are clear and conclusive, and we can only express our regret, that the course pursued on the part of the appellant—a course, we believe, to which he was confined, from the nature of the bill filed by PIKE—should preclude justice being fairly meted out, and that absence of the legal forms, considered necessary to have been observed, should alone have been the cause of the appeal being dismissed. In conclusion, his Lordship observed, that the decree, although it "declares that the members of the company are bound to pay to the plaintiff, does not contain any order against the individuals to pay. I think, therefore, that the ultimate mode of payment is left open, and that there is not, in this respect, any objection to the form of the decree." This appears to us to be the main, and, indeed, only chance on the part of the shareholders, of escaping from the consequences attendant on the decree, if attempted to be enforced, inasmuch that each shareholder, having paid up the full amount to which he was liable on his share, must be considered as exempted from all further calls.

We are not prepared to say in what position he is placed under the peculiar circumstances of the present case, but, as Lord COTTENHAM has decided that "the company" is liable, and not its members individually, we are at a loss to guess how JOSEPH PIKE is to benefit by the award, except by proceedings against himself and other members forming "the company," for it is admitted on all sides, that Mr. VIGERS is only the nominal defendant, acting in behalf of, and as representative or organ of, "the company." We may here refer to the amended Act for regulating the affairs of the company, 1 Vic., chap. 85, clause 8, which is couched in the following terms:—

And whereas doubts have arisen as to the manner in which execution ought to be levied upon judgments recovered against the said company or the directors thereof, according to the provisions of the said Act, and it is expedient to remove such doubts, be it therefore declared and enacted, That it shall and may be lawful for any person or persons entitled to take out execution for and in respect of any judgment already obtained or to be obtained against any company or director, or any other director, as a nominal defendant for and on behalf of the said company, to levy the amount of his, her, or their damages and costs upon the reserved fund of the said company, and all other property whatsoever belonging to the said company.

Thus carefully protecting the person and property of every shareholder from the effects of any judgment so obtained, which is strictly in conformity with the restriction to the liability on the shares beyond the amount to which they are limited.

We have already devoted so much space to the opinions expressed by Lord COTTENHAM, that we must needs refer our readers to the observations of Lord BROUGHAM and the Earl of DEVON, subjoined.

It alone remains to be considered, the peculiar position in which "the company" is placed by the decree of Lord PLUNKETT being affirmed by the House of Lords, whereby the company is called on to pay 55,0000, with interest and costs; the natural answer of "the company" to which, is a reference to the eighth clause of the amended Act of Parliament, whereby, with the view of removing all doubts which may arise as to the form of taking out execution in respect of any judgment, it is prescribed that the same shall be by recourse to the reserve fund, or other property, "belonging to the company," and not the individual members thereof; and this clause appears to us to be the only safe hold on which the shareholders can rest, and which will, doubtless, afford more work for the learned in the law. In the meanwhile, we presume, Messrs. VIGERS and TIMMINS, in their individual capacity as shareholders, will prosecute their suit with all energy in the English courts, the result of which will, we surmise from Lord COTTENHAM's observations, be of an opposite nature to that recorded in our columns of to-day.

The half-yearly general meeting of proprietors takes place on Tuesday next, and it is with the view of putting the shareholders in possession of the judgment, as given by the learned Lords, as well as a brief review of the circumstances of the case, and some passing remarks, that we have been induced thus to afford so much space, to the exclusion of several subjects which press upon us at the moment. We feel assured that no step will be left untried to protect the shareholders, by those who have so nobly put their shoulder to the wheel, but with the uncertainty of the law, and the fallibility of decisions of courts of justice, we are ever left in a state of doubt of the issue, however just may be the cause.

HOUSE OF LORDS—FEB. 22

[illegible]

ON THE EMPLOYMENT OF FEMALES IN COAL MINES

SIR,—I am afraid that you have forgotten your promise to attack this monstrous abuse. Your readers in Manchester have long been looking for your assistance in vain ; as for waiting until the Report of the Commissioners for Inspecting Mines is published, this is all a device of the enemy ; these gentlemen will never have a chance of seeing women and children employed as they generally are, and therefore cannot possibly give a correct report of their occupations—however, let them do their worst, and thanks to them for their assistance. But in the mean time it beats every man who does not wish to see his countrywomen employed beneath of burthen, to use all his energies in exposing the brutal system, for I feel convinced that it only requires exposure, in order that the authorities who now sanction it may be fairly ashamed out of it. We are doing all we can here, and hope that you will give us your powerful assistance. You have been engaged in exposing many iniquitous matters, and I am sure you have too much gallantry to refuse your assistance in attempting to alleviate the condition of women, in however low a position they may be placed.

EDWARD W. BARNET.

Manchester, Feb. 21.

Sir,—Having seen in your valuable paper

"Miner," Birkley's respecting the construction and application of water-wheels, and having for some time past had occasion to make calculations of the comparative powers of wheels and hydraulic or pressure-engines, I have been collecting all the information in my reach, in order to furnish data for my calculations. I have seen the wheel alluded to in this country working with tooth and pinion gear, and, although old and much out of repair, it works exceedingly well; it has been loaded 30,000 lbs., and works ten strokes per minute of seven-foot stroke. I believe it is generally understood that the principle of the power of wheels is entirely the specific gravity of the water. This, I think, is not the case; but most certainly it is with the pressure-engine, and I think it is not difficult to demonstrate what is the difference. Water falls through any height at a rate in feet per second equal to the square root of the height in feet multiplied by 8, and it must be evident that anything driven by that water must have the full gravity of that water, and the momentum of the velocity of descent. Now, while the wheel has the full advantage of the gravity, it certainly is wise to drive it as fast as possible, in order to make its velocity available. Having obtained the height of fall, and, consequently, the velocity of descent, and that that velocity is vertical, it must be evident that the water should be applied to that point where the circumference of the wheel demands nearest a vertical line; now, if the water is poured directly on the top of the wheel, it has to travel horizontally one-third of the diameter of the wheel, while it demands vertically; but from that point it descends two-thirds the diameter, and travels horizontally but one-sixth, so that if the water is poured on the top it once loses the advantage of velocity, and adds

one-third the diameter, or one-ninth the circumference, in weight of water on the centre, but still the whole height of fall should be used, by having the launder, or trough, very deep, and the surface of the water level with the top of the wheel; the water should be poured on the wheel at the point where it has the greatest descending velocity, through an aperture in the bottom of the trough; the buckets, or ladles, of the wheel should not be at so acute an angle with the floor of the wheel, as is usual, or, technically, should not be as much chimbled, but made to such angle as will let the water off as soon as it has made the most of the vertical line, for as soon the wheel begins to travel further horizontally than vertically its descending velocity is checked, and therefore the force of the wheel is impeded. I am neither a wizard or a patentee, and am almost as ignorant of x 's, y 's, and z 's as Captain Offey Truggin, but not so averse to new lights.

I have seen within the last few days a water-wheel at work in this county, from which I draw many of the ideas contained in those remarks. It is twelve diameter, five foot breast, and revolves when driving revolving machinery at a rate of thirty revolutions per minute; the fall of water is eleven feet from the surface of the stream, and flows on the wheel through an orifice in the bottom of the launder of 4 ft. 6 in. by 6 in.; it lifts a hammer, with a * * * under the point; the hammer balances with a ton, and strikes ninety-six blows per minute, lift one foot; the revolving machinery is a saw of two feet diameter, 1000 revolutions per minute, a boiler-plate punch, and shears; the shears that cuts the piles lifts a weight of 26 cwt. to break castings, and drives a blacking-mill; I believe it will drive all together without the hammer, and any one but the big, takes the water the same, but the buckets are quick chiselled, and the stream will not drive it, doing nothing, as fast as the other runs with the saw.

Suppose a water-wheel of fifty feet diameter, with a crank of five feet long, the crank is contained 8π times in the half diameter of the wheel, consequently a weight suspended by the crank placed horizontally will be balanced by one-fifth its weight, or the circumference of the wheel. The weight to lift it. Let the pressure-engine be the same stroke (ten feet), the speed eight strokes per minute, the crank travels three times the length of stroke, and is effective twice the length to each revolution; the pressure travels twice the length each stroke, and is effective once, therefore four revolutions of the wheel are equal to eight strokes of the pressure, and in like ratio for any other speed. Perhaps some of our scientific readers will have the goodness to inform us what should be the height of column for a pressure-engine to be equally effective with a foot wheel, each having 1000 cubic feet of water per minute?

Holwell, *Miner's*, Vol. 3, p. 32.

We are obliged to our correspondent for his communication, but have to read with regret that the manuscript is so illegibly written, as to lead to the presence of error in composition. It will be seen that one or two words have been left out. We shall be happy to correct any errors in our next. By the omission of a few minutes extra, and a little care on the part of our correspondents generally, much time would be saved us, and the correctness of

Sir,—Your *Mining Journal* contains much matter of real value to me.

published in mine's pursuits, but I do not recollect having yet seen the publication of any antidote against the rapid destruction of bucket leathers, in pumping engines, where the water in coal mines becomes poisoned with that which drains from adjoining ironstone mines. In coal-mines free from this mixture the leather stands pretty well; but, in the cases alluded to it decays in a week or two days. In this wonderful age of science and the suggestion of a remedy.

Yours truly,
A. Russell

Sir,—Mr. Williams having published a

the subject of my essay On the Constitution of Chalk, I beg to make a few remarks on that and on Mr. Williams's letter. Dr. Kane justifies his principle of reviewing my paper without having read it, by the circumstance of the abstract, from which he reviewed it, being a very full and perfect one, and also because the subject-matter of it was merely a popular sketch of the existing knowledge upon this branch of science. As regards the first—the accuracy of the abstract—Dr. Kane could know no paper till long after, and, therefore, that could have had no influence with me; and, as regards the second, the question is—Whether, by the mode he has adopted, he really has, or has not, given a correct view of the opinions which the paper contains? The latter I hold to be the case, and to supply the proof of the contrary from the paper itself. The question is a purely matter of fact, whether these opinions are, or are not, given in my paper? And, provided these identical errors do not exist, Dr. Kane's mode of reviewing must be pronounced an improper one, notwithstanding the distinction he would draw, as regards original experiments and the collation of facts. But Dr. Kane's last letter affords the best evidence that he is not over-careful in stating things of which he has not fully convinced himself of the accuracy; he says, in speaking of the accuracy of the abstract—“These deductions are given as explicitly in the abstract as in the paper, for all such expressions as he thought most important are marked *italics* in the abstract, and are literally the same in the complete paper.” Now, here is a very distinct statement; but how stands the fact? On referring to the abstract of my paper, as published by the Institution of Civil Engineers, I find in it—*mirabilis dicta*!—only one word printed in *italics*—the word “*inversely*”—probably so printed in anticipation of Dr. Kane's statements respecting it being the inverse of the fact; but Dr. Kane not only states that all the important expressions are marked in *italics* in the abstract, but that they are literally the same in the original. I have seen how the matter really stands in the abstract; now, let us turn to the original. I there find that, instead of all the important expressions being marked in *italics*, there are, with the exception of two names, together consisting of about five lines, only five or other words throughout the entire paper which are so marked—these words are, “*equilibrium*,” “*principles*,” “*wholly*,” “*and*,” “*tannin*,” and in this last word *inversely* does not appear. Whether these are the only important expressions in the paper I shall not pretend to determine; but certain it is that Dr. Kane does not consider it necessary to take much trouble in ascertaining the correctness of even his most positive statements; perhaps he was confounded my paper with something which he may have seen published about it in Mr. Williams's book, in which every page is supplied with so fair a proportion of *italics*, that it would justify the opinion even of an author, who had the same propensity, and who was said not to write in *italics*, but to think in *italics*. But touching these same *italics*, I may account for their almost total absence in my writings, by the fact, that I consider, if a man is obliged to call in the aid of his printer to force to his expressions, by the variety of the type, he had far better writing alone altogether.

William endorses to prove that I have taken undue credit for a degree of originality which my paper does not possess; but he is contradicted by Dr. Kane (and subsequently also by himself) that it does not at all appear by my paper that I have done any more than bring together the facts previously before the scientific world. In this opinion Dr. Kane is perfectly correct; I consider the facts already known to the scientific world are amply sufficient for every purpose of forming a current theory of combustion; but that, so those facts are distributed very widely, through a large number of books, and the reach of every one, their collation, in a connected form, can be useful. In my paper, therefore, I have quoted all my authorities where they may be severally consulted in the original, and I list by this means as acceptable an offering is made to the cause in as frequently results from the production of new facts. Most of our works on chemistry are compiled on this principle, the writer being very small compared with that which is gleaned from other periods, which have long been the channel through which the new facts to advance have been given to the world. But while on hand I have not laid claim to any merit whatever, or on the other hand I have not considered it necessary to make any assertion of my own merit, if others should consider it to be deserved. I have, simply given the facts and statements I considered necessary, and invited to judge of their value. There is nothing said about my originality, or the results of a long life of scientific and general

MEETINGS OF SCIENTIFIC BODIES.
IN THE ENGLISH WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOOR.
Royal Botanical	Regent's-park	Saturday	4 P.M.
Royal Geographical	Waterloo-place	Monday	8 P.M.
British Architects	14, Green-street	Monday	8 P.M.
Medical	Holt-court, Fleet-street	Monday	8 P.M.
Linnean	Holt-court	Tuesday	8 P.M.
Horticultural	21, Regent-street	Tuesday	2 P.M.
Royal Medical and Chir.	55, Berners-street	Tuesday	8 P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Chemical	47, Leicester-square	Tuesday	8 P.M.
Society of Arts	Adolphus	Wednesday	7 P.M.
Zoological	17, Pall-mall	Thursday	8 P.M.
Royal	Somerset House	Thursday	8 P.M.
Antiquarian	Somerset House	Thursday	8 P.M.
Royal Institution	Albemarle-street	Friday	8 P.M.
Botanical	20, Bedford-street, Cav. g.	Friday	8 P.M.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.
Westminster Medical	Exeter Hall	Saturday	8 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.

* The services of the President of the Geological Society (R. L. Murchison, Esq.) are announced to commence at his residence in Belgrave-square, this evening (Saturday, the 15th inst.)

PUBLIC COMPANIES.

COMPANY.	PLACE OF MEETING.	DAY.	HOOR.
London & South Western Railway	Nine Elms, Vauxhall	Feb. 26	1.
North Midland Railway	Leeds Station	26	1.
Hayle Railway Company	Rectory House, London-wall	26	1.
Hall and Berby Railway	Town hall, Kingston-upon-Hull	26	12.
Manchester and Lancashire Rwy.	2, Wilton-street, Strand	26	11-12
London and Blackwall Railway	1, Basinghall-street	26	1.
London Grand Junction Railway	1, Abchurch-lane	26	1.
Sheffield and Manchester Railway	1, Abchurch-lane	26	1.
Durham and Sunderland Railway	Sunderland	26	12.
Duffin, Lynn, & Co. Railway	Port Cawl	26	12.
Argyll Iron and Coal Co.	Office, 6, Liverpool-street	March	1.
Thames Tunnel	London Tavern	1	1.
West Cork Mining Company	George and Vulture Tavern	1	1.
Great North of England Railway	Bank, Lothbury	1	12.
London and Westminster Bank	Bank, Lothbury	2	2.
Redwood Consolidated Mining Co.	Office, 4, Finchbury-square	2	2.
Corwall Gt. United Mining Co.	George and Vulture Tavern	3	12.
Bristol and Exeter Railway	Bristol	3	12.
Imperial Brazilian Mining Ass'n.	London Tavern	3	2.
Dublin and Loughborough Railway	Dublin	3	2.
United General Gas Light Co.	8, Abchurch-lane	3	1.
Bank Life Assurance Company	New London Hotel, Bridge-street	9	12.
West London Railway	11, Abchurch-lane	10	1.
London and Croydon Railway	London Tavern	10	1.
London Bank	Oldfield Coffee-house	14	2.
Shore Bridge Mining Association	George and Vulture Tavern	17	1.

COMPANY.	PLACE OF MEETING.	DAY.	HOOR.
De Donville Mining Co.	10, March	26	12.
Brazilian Company	4, Broad-street-buildings	26	12.
Daneshorn Copper Mining Co.	10, Broad-street-buildings	26	12.
East Trestle Mining Company	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	26	12.
Northern Coal Mining Company	10, Newcastle Joint-Stock Bank	26	12.
Miners' Company	10, Newcastle Joint-Stock Bank	26	12.
Irish Waste Land (In. Society)	10, Newcastle Joint-Stock Bank	26	12.
Cambrian Iron & Steel Co.	10, Newcastle Joint-Stock Bank	26	12.

British Colonial Bk. & Loan Co. 6 per cent. 15, St. Within's-lane March 7.

NOTICES TO CORRESPONDENTS.

REVISOR OF THE LATE TRADE.—We are indebted to several correspondents for information connected with the various districts, and our tabular matter is, we believe, now perfect. It shall certainly appear in our next.

"F. W. (Redruth).—The paper, on a New Plan for Raising and Lowering Miners referred to by our correspondent as being worth extracting from the last Number of the Journal of the Franklin Institute, is copied verbatim from our Journal of the 25th June last.

THE NEWS LIGHT-ITS INVENTOR.—We have received a communication from "J. J." in reference to the inquiry of "W. K." in our last, but, as we intend adopting his suggestion, and reprint the paper, the location of his letter is rendered unnecessary. Mr. LITTLEMAN'S paper, we may, however observe, is styled "On the subject of a Safety Lamp for Miners," and appeared in No. III., vol. IV. of the Mining Review, published in March, 1880.

DURHAM COAST COAL COMPANY.—The report of the proceedings at the half-yearly general meeting held on Thursday last, reached us too late for insertion. It will appear in our next.

"E. W. B. (Manchester).—We shall feel pleasure in complying with the request of our correspondent as frequently as an opportunity is afforded.

MINING REVENUE.—We have received a long letter from "A Cornish Miner," but have not room, at present, for its insertion; indeed, we are almost inclined to agree with the point raised by our correspondent—Are not these questions too complicated for a newspaper? We will, however, endeavor, however, to find space for this in a week or two, but must press on our correspondents the necessity of compressing as much as possible the communications they may forward on this subject.

"B. M. (Newcastle).—The Polytechnic Institution, Regent-street, London.

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, FEBRUARY 26, 1882.

The judgment of the House of Lords in the appeal from the decree of the LORD CHANCELLOR of Ireland, in the case of the West Cork Mining Company, however warranted by the legal technicalities to which LORD COTTENHAM directed attention in delivering the judgment, cannot be received otherwise by the shareholders and the public than as being in direct contravention of all honesty and justice—so far as moral equity is considered in treating the fraudulent transactions which have given rise to the proceedings on which an appeal to the House of Lords was made. To afford a comprehensive view of this case, on which their Lordships have delivered their judgment confirmatory of the decree of LORD PLUNKETT, we deem it necessary briefly to narrate the facts and circumstances, stripped of their forensic vesture, and to display them in all their naked deformity, so as to exhibit the injustice done to the shareholders by the decree which has now been irrevocably confirmed by the decision at which the House of Lords has arrived.

The appeal, it will be seen, was referred to the three law lords—viz., LORDS COTTENHAM, BROUGHAM, and the EARL OF DEVON, and the judgment appears to be given with reference to the omissions, or errors, in the legal proceedings, on which technical objections arose, rather than the equity of the case—thus affording another illustration of the "glorious uncertainty of the law," for, we believe, had the respondent been placed at the bar of a criminal court, there could be no question as to the verdict of twelve honest men as jurors, empaneled to elicit "the whole truth, and nothing but the truth," or the judgment of the learned Judge who might preside—while, from want of legal acumen and tact on the part of the appellant (as we are led to suppose, from the terms in which the judgment is given), the law or equity of the case, in a civil court, is pronounced as being in favour of the party who perpetrated the fraud, and who, therefore, not only escapes punishment, but has an award in his favour, by which those who have been already victimized to the amount of 200, per share (the capital of the company being 100,000, paid up in full), are called upon to pay a further sum of 50,000 to 100,000. We will, however, proceed to the case, and reserve our comments until it is fairly placed before our readers, most of whom, we believe, are well conversant with its main features.

In the year 1834, the late LORD AUDLEY, possessing certain mineral property in Ireland, which had been worked by the Mining Company of Ireland, but abandoned by that company after a large expenditure, and who, in addition to which, had advanced his Lordship some 2000, or 10,000, on mortgage of the estates (of course, comprehending the royalties, or mineral rents), employed one JOSEPH PIKE, formerly a banker at Watford, where he failed, having paid 10, in the 11, to his creditors, but, at that time, an agent, clerical and scholastic, and discounter of bills in Peterborough and King's Arms-buildings, in this city, to form a company in London, with the object of working his mines. JOSEPH PIKE, having associated himself with Mr. JOHN DAVIS, of Talacre notoriety, and some other worthless, proceeded to establish a company for working the property, with a capital of 100,000, such sum being the amount agreed to be paid LORD AUDLEY for the

mines, by him JOSEPH PIKE, as agent to his Lordship, and in the further capacity of self-nominated managing director of the company, and thus leaving no available capital for working them. The company was formed, with 3300 shares of 50, each, one-third of which, or 55,000, was accepted by LORD AUDLEY in part payment, the remainder being payable in cash. To carry out this project, however, it was necessary that he, JOSEPH PIKE, the conductor of the scheme, or fraud (for such, in fact, it was, the representations made being grossly delusive), should divide the spoil (he taking some 25,000, to his own share) with certain of the directors, nominated by him, and accordingly fifteen shares, or 750, were duly transferred to each of the seven respective parties nominated as the original directors, to qualify them for holding office, and thus a veil was thrown over the transaction, and the fraud practised clouded in obscurity.

The company thus formed, with a set of directors nominated and qualified by LORD AUDLEY, or his agent, JOSEPH PIKE, reports were prepared, and submitted to the proprietors—dividends were declared out of the capital, and not the profits of the company—and the shares sold, in some cases, at premiums; the most gross misrepresentations were made as to the value of the ores of copper and manganese, which were said to be inexhaustible, and the El Dorado of Ballydehob could only be outshone by that of Llanasa—the riches of the mineral deposits were, to justify the ancient name given to the village contiguous, that of Ballydehob, or "the town of gold," and the fortunes of the fortunate shareholders were at once to be realized through JOSEPH PIKE and his confederates, by an English company, after the sacrifice of thousands by parties in Ireland, who were willing to, and actually did, reassign the property to LORD AUDLEY for a nominal consideration, and for which 165,000, was exacted from the West Cork Mining Company. Things went thus on until the *exposé* which appeared in our columns, and it was only after many months that the eyes of the proprietors were opened to the fraud which had been practised on them—JOSEPH PIKE, the agent of LORD AUDLEY, who pocketed some, if not a large portion, of the spoil, being the managing director of the company, and thereby acting in the double capacity of vendor and purchaser.

On an investigation having been entered into, arising out of the remarks made in our columns, certain proceedings were taken by the independent shareholders, comprising an influential body of mercantile men, who had suffered themselves to be duped, and after several meetings having taken place, JOSEPH PIKE and his confederates were ejected from office, and legal proceedings instituted for the protection of the interests of the shareholders—a course indispensably necessary, to prevent a further wasteful application of the funds of the company. In the year 1837 the late LORD AUDLEY died, having nominated JOSEPH PIKE, who had done his work so well, as executor to the estate and guardian (!) to his children; and, in this capacity, being armed with a power which rendered his position totally distinct from that in which he was formerly placed as agent for LORD AUDLEY, and managing director of the West Cork Mining Company, he instituted proceedings against the company, calling on them to pay over to the estate the sum of 55,000, or thereabouts, being the balance claimed as due to LORD AUDLEY on account of the purchase-money—55,000, having been paid in money, and a like amount in 1100 shares of 50, each. This bill, filed in the Irish court, was amended, by the proceedings being instituted against W. R. VIGORS, Esq. (one of the directors), as the nominal defendant, on behalf of the company, under the clause of the Acts of Parliament, which prescribes the mode in which all actions shall be brought, and was met by that gentleman (in his capacity as director) by a cross bill, praying that the bill in which JOSEPH PIKE was party as plaintiff should be struck off the file; and, further (as we understand the object of the bill), that the agreement for the purchase of the mines should be declared null and void, on the ground of fraud and collusion, and that the company should have a lien on the property for the sums advanced by them, or be repaid the amount abstracted, under the fraudulent representation of which complaint was made. These bills having been brought before LORD PLUNKETT, then Lord Chancellor of Ireland, and argued in court, the decree of his Lordship was in favour of JOSEPH PIKE, as executor of LORD AUDLEY, thereby declaring that the balance of the purchase-money (55,000), with interest thereon, and costs of suit, should be paid by the company; and, further, that the cross bill filed by W. R. VIGORS, Esq., on behalf of the company, should be struck off the file, but without costs. A decree of this nature, so subversive of all justice, was made subject of appeal to the House of Lords, which, having been argued the session before last (two years and a half ago), the judgment of their Lordships has been this week delivered, and which will be found subjoined.

We might, by way of parenthesis, observe that, during these proceedings, or rather in the early stages of the *exposé* being made by us, we were subjected to legal proceedings for libel, instituted by JOSEPH PIKE, which, after being protracted as long as the law would allow, without the case being brought into court, ended in the nonsuit of the plaintiff, JOSEPH PIKE being subsequently arrested for the costs, and placed in "duress vile." It is worthy of remark here to mention, that SOLARI, of Exchequer Bill notoriety, and GREEN, his lawyer—RAVALLO, whose name has lately been before the public—and DAVIS, of Talacre celebrity, were associates of PIKE, whose connection with this and other companies, as well as "private adventures," have rendered him so notorious.

From this brief narrative, it will be seen that JOSEPH PIKE, the executor of LORD AUDLEY, in whose favour the judgment of the House of Lords is pronounced, is the same JOSEPH PIKE as the agent of LORD AUDLEY in the formation of the company, and who nominated himself, and acted, as the managing director of the company so formed by him, that 165,000, was charged for a property (!) which had been repudiated by the Mining Company of Ireland, after an outlay of many thousands—that false reports were presented to the proprietors, whilst others were carefully concealed—fallacious representations made as to the produce of the mines, and dividends declared out of the capital, but represented as arising from the profits—that proceedings were instituted in England by Mr. VIGORS and others in the year 1836, to annul the fraudulent contract entered into, and to which LORD AUDLEY, JOSEPH PIKE, and the other original directors, were made parties as defendants (which has not yet come on for hearing)—that JOSEPH PIKE, on LORD AUDLEY'S demise, filed a bill in his capacity as executor—a cross bill, distinct from the proceedings in England, was thereupon filed—a decree given in favour of JOSEPH PIKE—an appeal to the House of Lords, and the judgment, whereby the company are to be further mulcted of 55,000, with interest (at least 15,000)—and, we should suppose, 30,000, will hardly cover costs.

We now come to the consideration of the judgment. LORD COTTENHAM, it will be observed, after some remarks on the nature of the proceedings, and the manner in which the case had been treated, adverts to the proceedings of PIKE, as executor of LORD AUDLEY, against the several members of the company, which error was afterwards corrected by making W. R. VIGORS, Esq., the nominal defendant, as managing director, in compliance with the provisions of the third clause of the Act of Parliament—the cross bill being subsequently filed by W. R. VIGORS in such capacity. His Lordship proceeds to lay down, as the basis of the judgment about being delivered, that such judgment must be held to apply to "the company"—the object of proceedings at law or in equity being carried on in the name of the managing director, being only that of removing difficulty in litigation. Having pointed out that the proceedings, although carried

on in the name of the managing director, must be considered as the acts of "the company," his Lordship thus proceeds—

"The question is not whether individuals who purchased shares in the company, and so became members of it, may, or may not, have had ground for complaint in which, it would be out of place to express any opinion, but whether the facts alleged and proved entitle 'the company,' as such, to any part of the relief prayed for."

Here, it will be observed, that the first legal technical objection, or quibble, is raised, inasmuch that, although W. R. VIGORS, in his individual capacity, has been prejudiced by the acts of JOSEPH PIKE and others, yet representing "the company," and PIKE being a shareholder, he is, in fact, praying relief, not only for himself but for the defendant and others—*ergo*, he has no *locus standi* in his position as managing director, however he might have one as an individual shareholder. In further confirmation of the view taken by his Lordship as to the nature of the proceedings instituted, he thus expresses himself—

"If any individual were deceived by any misrepresentation of the persons instituting and calling themselves trustees of the West Cork Mining Company, a case might exist entitling such individuals to be personally relieved against the consequences of such misrepresentations, but 'the company' itself cannot have any title to relief, founded upon their own misrepresentations."

LORD COTTENHAM, in continuation, adds that, in his opinion, the deed and prospectus, however, contain no such misrepresentations as would afford to "any one equitable ground for relief at this time"—an opinion which can only be founded on some other legal quibble, or a total ignorance of facts, which, after two years and a half consideration, can hardly be contemplated, for it is notorious, out of the House of Lords, whatever may be the opinions therein entertained, that a gross fraud was practised, and that the prospectus and reports were fallacious—while the twofold capacity in which JOSEPH PIKE acted, with the circumstance of the large sum taken as purchase-money, when contrasted with the report of Mr. ADAM MURRAY, and the act of the Mining Company of Ireland, on giving it up for a nominal consideration, would, we should have thought, at least, have rendered it a case of suspicion, and, therefore, not justify the opinions expressed by the learned Lord. Again, we find, in referring to the nature of the proceedings on the part of Mr. VIGORS, LORD COTTENHAM directs especial attention to the circumstance of the suit not being "properly framed," inasmuch that "the company," through Mr. VIGORS, are claiming relief as against themselves, while a portion of their body may (as is alleged by the bill in question) be precluded from the relief sought, by their conduct in the original transaction; and, in further illustration of this view of the case, states distinctly that the only redress which could be obtained was on the part of the innocent portion of the shareholders, who were no parties to the misrepresentations made, against those of "the company," and others lending themselves to the fraud.

It will be observed, in the course of the judgment, that LORD COTTENHAM refers to the proceedings instituted in the English Court of Chancery in October, 1836, in which VIGORS and TIMMINS (if we recollect aright) proceeded, on behalf of themselves and other members of the company, against LORD AUDLEY, including in the suit, as defendants, JOSEPH PIKE and the other directors who had been parties to the fraud, which his Lordship stated was totally distinct from that now under consideration, and on which, as still pending, he would offer no opinion, except that it was not open to the observations which applied to the present case, but "was one of a totally different character." It is unnecessary to follow the learned Lord through the arguments on which his decision is based, which, it must be admitted, as against "the company," are clear and conclusive, and we can only express our regret, that the course pursued on the part of the appellant—a course, we believe, to which he was confined, from the nature of the bill filed by PIKE—should preclude justice being fairly meted out, and that absence of the legal forms, considered necessary to have been observed, should alone have been the cause of the appeal being dismissed. In conclusion, his Lordship observed, that the decree, although it "declares that the members of the company are bound to pay to the plaintiff, does not contain any order against the individuals to pay. I think, therefore, that the ultimate mode of payment is left open, and that there is not, in this respect, any objection to the form of the decree." This appears to us to be the main, and, indeed, only chance on the part of the shareholders, of escaping from the consequences attendant on the decree, if attempted to be enforced, inasmuch that each shareholder, having paid up the full amount to which he was liable on his share, must be considered as exempted from all further calls. We are not prepared to say in what position he is placed under the peculiar circumstances of the present case, but, as LORD COTTENHAM has decided that "the company" is liable, and not its members individually, we are at a loss to guess how JOSEPH PIKE is to benefit by the award, except by proceedings against himself and other members forming "the company," for it is admitted on all sides, that Mr. VIGORS is only the nominal defendant, acting in behalf of, and as representative or organ of, "the company." We may here refer to the amended Act for regulating the affairs of the company, 1 Vic., chap. 88, clause 8, which is couched in the following terms—

"And whereas doubts have arisen as to the manner in which execution might be levied upon judgments recovered against the said company or the directors thereof, according to the provisions of the said Act, and it is expedient to remove such doubts, be it therefore declared and enacted, That it shall and may be lawful for any person or persons entitled to take out execution for and in respect of any judgment already obtained or hereafter to be obtained against any managing director, or any other director, as a nominal defendant for and on behalf of the said company, to levy the amount of his, her, or their damages and costs upon the recovered fund of the said company, and all other property whatsoever belonging to the said company."

Thus carefully protecting the person and property of every shareholder from the effects of any judgment so obtained, which is strictly in conformity with the restriction to the liability on the shares beyond the amount to which they are limited.

We have already devoted so much space to the opinions expressed by LORD COTTENHAM, that we must needs refer our readers to the observations of LORD BROUGHAM and the EARL OF DEVON, subjoined.

It alone remains to be considered, the peculiar position in which "the company" is placed by the decree of LORD PLUNKETT being affirmed by the House of Lords, whereby the company is called on to pay 55,000, with interest and costs; the natural answer of "the company" to which, is a reference to the eighth clause of the amended Act of Parliament, whereby, with the view of removing all doubts which may arise as to the form of taking out execution in respect of any judgment, it is prescribed that the same shall be by recourse to the reserve fund, or other property, "belonging to the company," and not the individual members thereof; and this clause appears to us to be the only safe hold on which the shareholders can rest, and which will, doubtless, afford more work for the learned in the law. In the meanwhile, we presume, MESSRS. VIGORS and TIMMINS, in their individual capacity as shareholders, will prosecute their suit with all energy in the English courts, the result of which will, we augur from LORD COTTENHAM'S observations, be of an opposite nature to that recorded in our columns of to-day.

The half-yearly general meeting of proprietors takes place on Tuesday next, and it is with the view of putting the shareholders in possession of the judgment, as given by the learned Lords, as well as a brief review of the circumstances of the case, and some passing remarks, that we have been induced thus to afford so much space, to the exclusion of several subjects which press upon us at the moment. We feel assured that no step will be left untaken to protect the shareholders, by those who have so nobly put their shoulder to the wheel, but with the uncertainty of the law, and the fallibility of decisions of courts of justice, we are ever left in a state of doubt of the issue, however just may be the cause.

HOUSE OF LORDS—FEB. 22.

[illegible]

Lord BROUGHAM. My Lords, I entirely agree with my noble and learned friend the view that he has taken of this case, and I concur in the reasons he has given for the Earl of Devon's—My Lords, I attended at the hearing of this case, which occupied considerable time, and, I, therefore, became my duty to endeavour to form an opinion upon it. It is the greatest part of that which has fallen from my noble and learned friend, I certainly concur. I think the cross bill was improperly instituted in the present parties, and that, looking at the pleadings, and the way in which the case came on as would have been justified any other decree on that cross bill; but, my Lords, the decree is another view of the case, which I have taken, and which I submitted to my noble and learned friends, who, however, differ from me upon it; and I regret to find myself ready, however, to bow, with the utmost deference, to their superior wisdom and experience, and, of course, also to their advice which they shall give your Lordships as to the judgment to be pronounced; but I confess, my Lords, that I have given much consideration to this case, which occupies for a few hours in the view which I take upon one part of the case. My Lords, the suit is in equity, but it is in the nature of an action of covenant. It is, in fact, to have an account taken in the nature of an account as a covenant, and the form in which that is in equity on this.—They desire to have an account may be taken of the sum due to the plaintiff by the defendant in the purchase of the said lease. Thus, my Lords, we look to what the said lease is, and how it is to be performed. The Act of Parliament referred to is an Act giving to the company, or, rather, to the partners, if they are not incorporated, though they are a corporation, and allowing them to sue, or to be sued, in the name of one of the partners. The Act of Parliament having given that power, very wisely and properly, to the company, or, rather, to the partners, in any parties may be so attached through one of the members, and, in a very special manner, a clause, which points out the terms of the lease, and the formalities, with which the company shall be allowed to take the lease. They are to have notice, and they are to have notice given to all the partners, and in the name of three directors at least; that appears to me to be a wise limitation. In a company, or partnership, consisting of a very large number of persons, of course those who reside at a distance may not, and cannot, confide in the discretion of those who take the lease, and they may be content to be protected themselves against being liable for covenants contained in any lease that may be taken, unless that lease is taken under circumstances which give an opportunity of forming an opinion upon it. My Lords, in this case, between Lord Audley and an individual, who afterwards became executor of Lord Audley, and who, himself, is the plaintiff, seeking by this bill to have the lease, and in the name of three directors against the shareholders. I do not, made out much more clearly than they are, unless there are circumstances of fraud in the view which I conceive ought to be taken of it in point of law, unless having entered into the original lease with the individual, does not, as executor, the whole of the purchase-money, and, after his death, a bill is made out by the plaintiff, as executor of Lord Audley, on foot of the purchase-money of the said lease. And the decree is, that that account shall be taken of all the shareholders are liable for the payment of what is due on the account. That would have been made the shareholders personally liable, and, for myself, think that a court of equity ought to give a relief, which has effect against the whole body of shareholders, by the means and form of an Act of Parliament, when the contract was made, the relief is founded on equity. That, shortly, is the ground upon which I have felt unable to concur in the decree of this case by my noble and learned friends, and I have felt it my duty to draw your Lordships' attention to it.—Decree affirmed, with costs.

ON THE EMPLOYMENT OF FEMALES IN COAL MINES

SIR,—I am afraid that you have forgotten your promise to attack this monstrous abuse. Your readers in Manchester have long been looking for your assistance in vain; as for waiting until the Report of the Commissioners for Inspecting Mines is published, this is all a device of the enemy; these gentlemen will never have a chance of seeing women and children employed as they generally are, and therefore cannot possibly give a correct report of their occupations—however, let them do their best, and thanks to them for their assistance. But in the mean time it behoves every man who does not wish to see his countrywomen employed as beasts of burden, to use all his energies in exposing the brutal system, for I feel convinced that it only requires exposure, in order that the proprietors who now sanction it may be fairly ashamed out of it. We are doing all we can here, and hope that you will give us your powerful assistance. You have been engaged in exposing many iniquitous malpractices, and I am sure you have too much gallantry to refuse your assistance in attempting to alleviate the condition of women, in however low a sphere she may be pined.

EDWARD W. H.

[We have not lost sight of the question, which is one of interest, whether considered with reference to the state of degradation to which the sex is devoted, or the employment of children of tender age in collieries; for, in mining districts, we believe, the labours of the former are confined to break-
ing, or "bucking," the trees, and other works at surface. As regards the employment of children, there can be no doubt but that, in many instances, except where of too early an age, it is imperative, in bringing them up to a practical knowledge of those duties which they are subsequently called upon to perform. They are, moreover, necessary, in many cases, where the services are better performed by the boy than the man. The employment of women underground is brutal—but we await the publication of the evidence, which, we doubt not, will be moved for by Lord Ashley, or some other hon. member of the House, early in the session.]

TO THE EDITOR OF THE MINING JOURNAL:

MINER.—Having seen in your valuable paper some remarks from "A Miner," Blacklick, respecting the construction and application of water-wheels, and having for some time past had occasion to make calculations of the comparative powers of wheels and hydraulic or pressure-engines, I have been collecting all the information in my reach, in order to furnish data for my calculations. I have seen the wheel alluded to in this twenty working with tooth and pinion gear, and, although old and much out of repair, it works exceedingly well; it has been loaded 30,000 lbs., and works ten strokes per minute of seven-foot stroke. I believe it is generally understood that the principle of the power of wheels is entirely the specific gravity of the water. This, I think, is not the case; but most certainly it is with the pressure-engine, and I think it is not difficult to demonstrate what is the difference. Water falls through any height at a rate in feet per second equal to the square root of the height in feet multiplied by 8, and it must be evident that anything driven by that water must have the full gravity of that water, and the momentum of the velocity of descent. Now, while the wheel has the full advantage of the gravity, it certainly is wise to drive it as fast as possible, in order to make the velocity available. Having obtained the height of fall, and, consequently, the velocity of descent, and that that velocity is vertical, it must be evident that the water should be applied to that point where the circumference of the wheel descends nearest a vertical line; now, if the water be poured directly on the top of the wheel, it has to travel horizontally one-third of the diameter of the wheel, while it descends one-sixth; but from that point it descends two-thirds the diameter, and travels horizontally but one-sixth, so that if the water is poured on the top at once loses the advantage of velocity, and adds the extra friction of

one-third the diameter, or one-ninth the circumference, in weight of water on the centre, but still the whole height of fall should be used, by having the launder, or trough, very deep, and the surface of the water level with the top of the wheel; the water should be poured on the wheel at the point where it has the greatest descending velocity, through an aperture in the bottom of the trough; the buckets, or ladles, of the wheel should not be at an acute an angle with the floor of the wheel, as is usual, or, technically, should not be as much chiselled, but made to such angle as will let the water off as soon as it has made the most of the vertical line, its descending velocity is checked, and therefore the force of the wheel is impeded. I am neither a wizard or a patentee, and am almost as ignorant of x , y , and z as Captain Offey Troddin, but not so averse to new lights.

I have seen within the last few days a water-wheel at work in this county, from which I draw many of the ideas contained in those remarks. It is twelve diameter, five feet breast, and revolves when driving revolving machinery at a rate of thirty revolutions per minute; the fall of water is eleven feet from the surface of the stream, and flows on the wheel through an orifice in the bottom of the launder of 4 ft. 6 in. by 6 in.; it lifts a hammer, with a * * * under the point; the hammer balances with a ton, and strikes ninety-six blows per minute, lift one foot; the revolving machinery is a saw of two feet diameter, 1000 revolutions per minute, a boiler-plate punch, and shears; the shears that cuts the piles lifts a weight of 26 cwt. to break castings, and drives a blissing-mill; I believe it will drive all together without the hammer, and any one but the saw with it. There is another of the same diameter and breast beside this, takes the water the same, but the buckets are quick chiselled, and all the stream will not drive it, doing nothing, as fast as the other runs with the saw.

Suppose a water-wheel of fifty feet diameter, with a crank of five feet long, the crank is contained five times in the half diameter of the wheel, consequently a weight suspended by the crank placed horizontally will be balanced by one-fifth its weight, or the circumference of the wheel. The same weight lifted by a pressure-engine will require more than its own weight to lift it. Let the pressure-engine be the same stroke (ten feet), and the speed eight strokes per minute, the crank travels (ten feet), through the length of stroke, and is effective twice the length to each revolution; the pressure travels twice the length each stroke, and is effective once, therefore four revolutions of the wheel are equal to eight strokes of the pressure, and in like ratio for any other speed. Perhaps some of your scientific readers will have the goodness to inform us what should be the height of column for a pressure-engine to be equally effective with a 50-foot wheel, each having 1000 cubic feet of water per minute?

Holmeswell, Flintshire, Nth. 12.

[We are obliged to our correspondent for his communication, but have to express our regret that the manuscript is so slightly written, as to lead to the chance of error in composition. It will be seen that one or two words have been left out. We shall be happy to correct any errors in our next. By the devotion of a few minutes extra, and a little care on the part of our correspondents generally, much time would be saved us, and the correctness of the print be secured.]

SIR.—YOUR MINING ENGINEER.

mine.—Your *Mining Journal* contains much matter of real value to all concerned in mineral pursuits, but I do not recollect having yet seen the publication of any antidote against the rapid destruction of bucket leathers, in pumping-engines, where the water in coal mines becomes poisoned with that which drains from adjoining ironstone mines. In coal-pits free from this mixture the leather stands pretty well; but in the cases alluded to it decays in a week or ten days. In this wonderful age of scientific improvements I hope some of your able correspondents will favour me with the suggestion of a remedy.

Edw. St. A. SURNAME.

Feb. 20, 1907. A. SUBSCRIBER.

MR. WILLIAMS AND DR. KANE ON THE COMBUSTION OF COAL

Sir.—Mr. Williams having published a second letter from Dr. Kane, on the subject of my essay *On the Constitution of Coal*, I beg to make a few remarks on that and on Mr. Williams's letter. Dr. Kane justifies his principle of reviewing my paper without having read it, by the circumstance of the abstract, from which he reviewed it, being a very full and perfect one, and also because the subject-matter of it was merely a popular sketch of the existing knowledge upon this branch of science. As regards the first—the accuracy of the abstract—Dr. Kane could know nothing, until after he had written his review, as he did not see the original paper till long after, and, therefore, that could have had no influence with him; and, as regards the second, the question is—Whether, by the mode he has adopted, he really has, or has not, given a correct view of the opinions which the paper contains? The latter I hold to be the case, and deny the proof of the contrary from the paper itself. The question is a simple matter of fact, whether these opinions are, or are not, given in my paper? And, provided these identical errors do not exist, Dr. Kane's mode of reviewing must be pronounced an improper one, notwithstanding the distinction he would draw, as regards original experiments and the collation of facts. But Dr. Kane's last letter affords the best evidence that he is not over-careful in stating things of which he has not fully convinced himself of the accuracy; he says, in speaking of the accuracy of the abstract—"These deductions are given as explicitly in the abstract as in the paper, for all such expressions as he thought most important are marked *italics* in the abstract, and are literally the same in the complete paper." Now, here is a very distinct statement; but how stands the fact? On referring to the abstract of my paper, as published by the Institution of Civil Engineers, I find it in *miraculous* dicta!—only one word printed in *italics*—the word "*inversely*"—probably so printed in anticipation of Dr.'s statements respecting it being the inverse of the fact; but Dr. Kane does not only state that all the important expressions are marked in *italics* in the abstract, but that they are literally the same in the original. I have seen how the matter really stands in the abstract; now, let us refer to the original. I there find that, instead of all the important expressions being marked in *italics*, there are, with the exception of two names, together consisting of about five lines, only five other words throughout the entire paper which are so marked—these words are, "*equal*," "*its*," "*principles*," "*wholly*," and "*tennis*;" and in this last word *inversely* does not appear. Whether there are the only important passages in the paper I shall not pretend to determine; but certain it is that Dr. Kane does not consider it necessary to take much trouble in stating the correctness of even his most positive statements; perhaps he was confounded my paper with something which he may have seen published about it in Mr. Williams's book, in which every page is supplied so far as a proportion of *italics*, that it would justify the opinion even of an author, who had the same propensity, and who was said not to write in *italics*, but to think in *italics*. But trusting these same remarks, I may account for their almost total absence in my writings, by saying, that I consider, if a man is obliged to call in the aid of his printer as often to his expressions, by the variety of the type, he had far better write alone altogether.

Mr. Williams endeavours to prove that I have taken undue credit to myself for a degree of originality which my paper does not possess; but in this he is contradicted by Dr. Kane (and subsequently also by himself) stating, that it does not at all appear by my paper that I have done any thing more than bring together the facts previously before the scientific world. In this opinion Dr. Kane is perfectly correct; I consider the facts already known to the scientific world are amply sufficient for every purpose of forming a correct theory of combination; but that, as those facts are distributed very widely, through a large number of books, not within the reach of every one, their collation, in a connected form, cannot but be useful. In my paper, therefore, I have quoted all my authorities, and where they may be severally consulted in the original, and I believe that by this means an acceptable offering is made to the cause of science as frequently results from the production of new facts. Most of my best works on elementary are compiled on this principle, the original matter being very small compared with that which is gleaned from the scientific periodicals, which have long been the channel through which most of the new facts in science have been given to the world. So while in the one hand I have not laid claim to any merit whatever, on the other hand I have not considered it necessary to make any assertion of achieving any merit, if others should consider it to be deserved. I have, in fact, simply given the facts and statements I considered necessary, and are left others to judge of their value. There is nothing said about it, my views and inquiries being the result of a long life of scientific and practical

"I call attention to the subject," nor yet is there any credit taken for having "studied the atomic theory for forty years." In truth, I am no friend to these long periods of incubation, the effect is usually to add rather than to subtract; but these observations are intended to be general, and not (as Dr. Kane says, in his remarks upon my paper), of course to apply to Mr. Williams's inchoate productions, which are stated to be the result of this long period of patient maturation.

Mr. Williams states that my essay contains contradictions, by which, according to you take the one side or the other, you may prove just what you desire. It must certainly be a very clever paper if this be the case; but the circumstance is unknown to me if it be so. At all events, Mr. Williams has now been writing about this paper for nearly two months, and he has not yet proved one error to exist in it; nor has he ventured to give any quotation from it in support of any of his assertions. But if it were really as he described it, "full of chemical errors," the task, methinks, would not have been an unpleasant one for him, to exhibit these errors in something more than substantial than mere assertion.

The violence of Mr. Williams's last two letters is not likely to add much weight to his arguments, nor to aid the cause he professes to have in view—the elucidation of truth. Believing that his letter of the 5th inst. had been written under the influence of some accidental derangement of temper, I was willing to pass over his indecorous and unbecoming expressions, and I tendered him the olive branch, in token of oblivion to the past. His last letter makes me think differently, and, while I still hold to the offer I have made, I also tender him my gauge, in order that he may accept either that may be most to his mind. If he accept the first, well—if he choose the second he must not blame me, if, after he has so judiciously exposed his vulnerable points, I avail myself of those weapons which I consider most suitable, and say with Shakespeare—

"Now put your shields before your hearts, and fight
With hearts more great than shields."

On the tone of Mr. Williams's future letters will that of mine also depend; he has, therefore, the determination of the matter in his own hands.

As regards Dr. Kane's remarks, I view them rather in sorrow than in anger; although I think there are some remarks in his last letter which might have been spared, without lessening the force of his observations. I have not upon the whole much to object to in the tone he employs; I object greatly to his want of accuracy in his statements; but having already contradicted these, I should probably have contented myself without going further into the matter, particularly as he has seemed me, by letter (but which I should not have alluded to if Mr. Williams had not first mentioned it), that he had no intention of misrepresenting my opinions. Few scientific men have had their opinions more misunderstood and misrepresented than Dr. Kane himself, or have had more ridicule (perhaps unjustly) thrown upon their labours; he should, therefore, have been the last man to adopt the same plan himself, which he has had so much reason to condemn in others. As a professional man, the consequences to him are of importance—to me they are none. I write for my amusement; if others find instruction from my writings I am glad; but if they object to them they have the remedy in their own hands, and are quite at liberty to do so. As Dr. Kane defends his mode of reviewing works without reading anything more than an abstract of them, I suppose it is a plan not objected to in Ireland, but on this side the Channel I believe it is unknown; and even his friend (Mr. Williams) says that he himself "should not have ventured to assert that there were errors in Mr. Kane's paper, from the perusal of a mere abstract of its contents;" by which admission I can only conclude that he condemns the plan adopted by Dr. Kane, who distinctly acknowledges he obtained his information from no other source.

In conclusion, I should, perhaps, do an injustice to the able secretary to the Institution of Civil Engineers, if I did not acknowledge the general accuracy of the abstract of my paper; but what I contend for is, that no abstract can give such information of an author's views as to justify a critical examination of the subject he treats on. CHARLES HOOD.

Barclay Street, Feb. 15.

ON THE ECONOMY OF FUEL AND PREVENTION OF SMOKE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As an addition to the collection of useful data on the economy of fuel and prevention of smoke with which your valuable paper is stored, I beg to send you the enclosed report on "smoke burning," recently published by some public authorities in Bradford, Yorkshire. Perhaps a collection of facts of this kind will enable us to arrive at truth on this subject much sooner than by discussing the more doctrinal points of the "chemistry of combustion." At least it would appear to be a necessary preliminary step to the latter, and certainly more agreeable than arguing the matter with interested persons, or with those, who by taking out patents for particular plans or otherwise, may have committed themselves in support of certain opinions.

Considerations of the above nature have prevented me replying to Mr. C. W. Williams's observations on my two short letters on this subject; for besides the great abilities of that gentleman, which prove that "though beaten he can argue still," he exhibits such an aptitude at misquotation and confusion of terms, that it would take up a great deal more time and space in your columns to point out one-half of his errors than the entire correction of them all would be worth. For instance, in his letter in the *Journal* of the 23d of January, he expressly charges me with quoting him incorrectly, when, in fact, I did not quote him at all, neither was the passage marked as a quotation; but in his eagerness to charge on me what I find he is almost constantly guilty of himself, in attempting to represent what he really did say, he actually misquotes his own words, and at the same time states that it "would indeed" have been "stupid" in his part to have said otherwise. Stupid, indeed, it was, as any one may see by comparing the passages referred to.

A MANUFACTURER.

[The report accompanying our correspondent's letter is too lengthy to admit of insertion in our present Number—a brief notice of which will be, however, found in another column.]

RAILWAY ENGINEERING—PROF. VIGNOLES'S LECTURES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The public must feel indebted to you for the lengthened report you gave, in your increasingly interesting *Journal*, of Mr. Vignoles's last lecture, which is calculated to "do a world of good." * * * * * There is no lack of evidence of this gentleman's honesty and disinterestedness, though he discovers a partiality, unworthy his great talent, towards those of his "own order," and even, by calling that order "a profession;" "for civil engineering, strictly speaking, is not 'a profession'—in truth, it is not very easy to define what constitutes a man a civil engineer. All the students to whom the Professor delivers lectures, will, as a matter of course, be called civil engineers, though many of them will, probably, be incompetent to assume, with science and economy, any great work; while many other men—as the late Messrs. Brunel, Walker, and Telford, and the present Messrs. Cubitt, Gibbs, and others—acquired eminence in the calling to which their natural powers lent them, without the advantage of a 'regular' scientific education. That man is pre-eminently a civil engineer, whether brought up at the feet of Telford, or self-taught, who can build bridges, construct railways, sink shafts, work mines, make tunnels, erect buildings, make roads, canals, docks, &c., on scientific and economical principles, though it is not necessary to be able to do all this in order to be a civil engineer, for we had civil engineers before railways, for instance, were thought of.

Of the incompetence of most of our present civil engineers to make cheap railways—not to say a word about science in the construction of most of them—we have the evidence of the Professor himself, and most valuable, though unfortunately given late, that evidence is. It would be charitable for the "professional" reputation of certain engineers, to designate their conduct dishonest; and, probably, some of them would prefer this designation to having their scientific attainments called in question.

The vast extent of the expenditure (which has been proposed with much ostentation) in railway construction, over the estimation, has even appeared to us more the result of a want of more principle than of imagination; but, after making every allowance for the novelty of the undertakings, and other circumstances, it is impossible to suppose, in those cases where the expenditure has doubled, and even tripled, the estimate, the engineers could be ignorant that the estimate was too low. It is possible for an engineer to esteem himself in work, regardless of moral, calculation, then, in the case of common sense, and even that of humanity, but his ignorance is not his own fault, and the engineer of civil engineering is used. Upon this subject, Mr. Vignoles's remarks, which may be read again and again, are of the deepest interest. He says:—'For not only has the construction, and almost inevitable, enormous cost been thrown on each owner as affected, but it has paralyzed, and

will long continue to paralyze, the most honest and well-grounded schemes for further internal communication in general, and of all improvements, the cost of which is dependent on the engineer; and, though each case ought to be tried and judged on its own merits, the public confidence appears gone, and the capitalist observes with a sneer, 'You engineers are all alike, we can trust none of you!' He called on the directors of public companies, in justice to themselves, to the subscribers, to their own engineers, and to the public in general, to publish such details as would exonerate his profession, and leave it charged with no more than was attributable to it. He called upon his brother engineers to follow this out, by furnishing their quota of information. Let the public in general know these details as matters of railway statistics of the highest interest—let the profession know them as matters of precedent of the most valuable kind—and let the capitalist be undeceived as to his present impressions of mistrust. Quite independent of any financial difficulties—quite independent of any standing orders or regulations of Parliament—a man might as well cry 'mad dog' as talk of a new railway speculation, or a water-work, or, indeed, any public undertaking, where the function of profits is a certain known quantity, but dependent on estimates which are considered visionary, because 'all engineers are alike in this respect.' Let, then, the young engineer mark the bitter lesson the oldest engineers are now learning. Let them cause the most assiduous inquiry into the details, &c. * * * Let them never have it said of them, that they had whispered among themselves, 'Oh! it will never do to tell the directors what the work will cost, or it will never be entered upon'—a remark which he had heard fall from an eminent engineer—nor let them indulge in the vain hope of future fame, by taking, as their text, the observation attributed to another engineer of the very highest and well-deserved reputation—'A century hence there will be no one who will ask what this work cost—they will only inquire who did it.'

The impression upon the public mind, thus truly and faithfully recorded, has, indeed, operated most prejudicially, at a time when every disposition existed to ameliorate the condition of mankind, by the practical application of the principles of philosophy (as, to our admiration, they are daily being developed) to the wants, comforts, prosperity, intelligence, and happiness, of the noble work of God's hands; and, shame to the scientific "profession," that to them is this check to the progress of philosophy, thus unreservedly, though most deservedly, attributed. Mr. Vignoles is most solicitous to get his order exonerated—but how is that possible, when he himself admits that, after all the excuses that can be called out of the details he calls for, they must be left chargeable? What the amount of the charge will be, may be inferred from the recorded conduct of two of the most eminent of the body. Mr. Vignoles may be assured, that he may call on railway engineers and directors to furnish honest data, as matters of railway statistics, until Doomsday, without the call being responded to, unless the Legislature compel the production; indeed, his allusion to the probable necessity of such interference, indicates that he himself anticipates as much. Far be the thought that there is no honest railway director, for I have the pleasure of knowing several most estimable and worthy men who are directors of railways; but in corporate bodies, where individual responsibility is not felt, a sense of moral obligation is too often found at a low ebb. Moreover, what practical good could now result from having such details? Unfortunately, the mischief is done, and the recorded sensibility of the public on the subject is a sufficient security against the recurrence of the evil, for you may as well cry "mad dog," as endeavour to restate civil engineers in public confidence, especially after the learned Professor's exposure of the base and unprincipled conduct of two, at least, of the most eminent of their number, who merit severe punishment, much more than the unfortunate wretches for whom want, and its concomitant crime, have procured the most terrible fate, death excepted, to which human tribunals could sentence them. But, because the engineers have, through their own incompetence, rapacity, or vanity, all or either, become bankrupt in reputation, though not in estate (as the splendour in which most of them live abundantly testifies), is it to be permitted, that objects of the highest importance—pre-eminently, the object of carrying out, to its utmost extent, the system of cheap and expeditious conveyance—shall be kept in perpetual abeyance? Certainly not; philosophy is too powerful not to overcome all difficulties, and, eventually, to triumph over all the opposition offered to its progress. What, then, is to be done? I answer the question by transcribing a quotation of which the able lecturer availed himself, and which, in my opinion, gives the finishing stroke to the system, as well as to the practices which have hitherto prospered under it, that has produced an amount of loss and suffering too extensive to be adequately described—"With such results before us, would it not be almost criminal not to endeavour to secure the advantage of a better system?" "The average cost of English railways (continued Mr. Vignoles) has been nearly 30,000l. per mile. The cost of future lines must not be more than one-half of that sum, or it may be considered that there is an end to the extension of the railway system. Such a reduction might easily be made. The more cost of maintenance of way is from 200l. to 300l. per mile per annum. In Belgium, and in the United States of America, most of the railways are single lines."

If the engineers had been competent to form railways, 30,000l. per mile would not have been expended instead of 15,000l.; and even the latter sum is too much by nearly, or quite, one-third. In my letter to the committee of the Devon and Cornwall Railway, published in your *Journal* of the 27th November last, it was stated that railways could be made for 11,000l. per mile, and I now repeat the statement with more confidence than ever.

Nearly twelve months ago I prepared a paper on this subject for publication, but the effect produced on the public mind by the causes so truly depicted by the learned Professor, deterred me from proceeding with my design; but, now that this gentleman, who is justly considered an authority, has declared that railways may be constructed for half what they have hitherto cost, I hesitate not to send you the MS., leaving you to publish it with the letter, or separately, as may be most convenient, should the one and the other be deemed worth insertion. Convinced that the plan propounded would constitute railways a safe and profitable medium for the investment of capital, I hope that the attention of both philanthropists and capitalists will be drawn to the subject, and inquiry be initiated into its merits, which, at first, is all that could be desired. A single line would, under proper arrangements, suffice from Exeter to Falmouth, and, in reference to foreign commerce, put the Southampton Railway (on which the changes are exorbitant) *à néant*. The adoption of a single line, in any locality, would give a stimulus to competition, without which the public, for whose benefit extraordinary, and even dangerous, powers were granted by the Legislature, will never enjoy a tithe of the advantages which the philosophy of railways is capable of conferring. In fact, if the facility of communication is the test of civilization, the powers of man are inadequate to the task of constructing those advantages.

In tracing the progress of improvements on the common roads, Mr. Vignoles passed on Telford and other civil engineers high encomiums, while he castigated all mention of M'Adam, who brought the turnpike-roads to their present state of perfection, the palpable advantage whereof, I have little doubt, gave rise to the introduction of the railway system. M'Adam, however, had no claim to novelty. His merit consisted in the application of a principle long used upon the roads and the islands of Jersey and Guernsey. M'Adam and Telford considered the country more worthy than any two men I ever read or heard of.

It is, as Mr. Vignoles informed the students was the case, the Romans, who still in road making he considers worthy of imitation, formed their splendid roads of concrete, in some instances twelve feet thick, how much more important must it be to construct the upper works of railways on a foundation of this kind, especially as with wooden beams, six inches by six, a very thin bed of concrete suffices? And why, it may be for, they asked, has not the example of the Romans been followed by the engineers of the present day, including the able Professor himself? What one build on a rock, and not on sand. As an improvement in common roads, the stone track, or turnpike, in the Commercial-road, which has also been laid down at Woking and at Reigate, and of which I was the proposer, in 1825, could not have been more worthy the lecturer's notice. At the above period, I especially urged the Commissioners of Sewers to use the plan in certain streets in the City, but they opposed me with the usual dogmatical objection as they were not used to it, though, after the lapse of a few years, they had recourse to the plan upon an extensive scale, either of their own accord, or at the instigation of an influential individual, who is of opinion that "there is nothing like better."

Manchester, Feb. 21.

THOMAS PARNIS, C.E.

THE "LEVIATHAN MISSOURI,"

NOW EXHIBITING AT THE EGYPTIAN HALL, PICCADILLY, LONDON.

At the meeting of the Geological Society of London on Wednesday evening (Mr. Murchison, President, in the chair), a paper was read by Prof. Owen, "On the Mammalian Remains exhibiting at the Egyptian Hall;" and, as these fossils, particularly the great skeletons, are objects of considerable public curiosity, we devote from our usual course, of noticing the subjects in the order in which they are brought before the meetings of the society, and proceed at once to give a brief abstract of Professor Owen's paper.—After alluding to the manner in which the skeleton is put together, the author enters upon the important question—What is the species of animal to which it is to be referred? It is, he says, a mammiferous animal, and the bones of the anterior extremities prove it to be a member of the great primary group of ungulates, while the enormous tusks of the upper jaw show that it belonged to the proboscidean group of pachyderms, and the molar teeth that it was identical with the tetracodon, or *Mastodon giganteum*. With respect to the position of the tusks, Prof. Owen explained, that, in consequence of the mode of insertion in the sockets, the tusks of the mastodon, like those of the elephant, can be turned in any direction, when the natural attachments are destroyed by decomposition; and that, consequently, superincumbent pressure may have bent the tusks of the specimen in Mr. Koch's museum into their present position. The author next considers the relation which the tetracodon and mastodon bear to each other, and to determine whether they ought to be regarded as distinct genera; but he first alludes to the researches of those who have preceded him in the inquiry. Dr. Goodman, of Philadelphia, founded the former genus upon a fossil lower jaw, which contained molar teeth, agreeing with those of the mastodon, but which possessed two tusks, projecting from the symphyseal extremity. Mr. W. Cooper, of New York, suggested that the tetracodon was the young of the *Mastodon giganteum*, and that the tusks were merely milk teeth, which were lost as the animal became adult. This latter opinion, advocated by some zoologists, but not illustrated by analogies, was opposed by Dr. Hays, who, in an elaborate memoir, adduced what he considered sufficient evidence to prove that Dr. Goodman had not committed the error of describing, as a new animal, the young of a known species; and he adds, with reference to the suggestion of Mr. Titian R. Peck, that the tusks in the lower jaw might be only a sexual distinction—that the then existing state of knowledge was not sufficient either to confirm or refute the suggestion. An attentive examination of several lower jaws in Mr. Koch's collection, containing molar teeth of *Mastodon giganteum*, have enabled Prof. Owen to establish the important fact, that an animal of the same size and molar dentition as the mastodon, was characterised, in the adult state, by a single tusk, or incisor, projecting from the symphyseal extremity of the right ramus of the lower jaw, and that the assumed peculiarity of the tetracodon—viz., the two inferior tusks, one in each ramus, is manifested only by immature animals. There are also in the collection several lower jaws, without any trace of tusks, and agreeing, therefore, with the old character of the genus *Mastodon*. In all these specimens the molar teeth present the forms and proportions which distinguish the *Mastodon giganteum*. Prof. Owen then details the series of comparisons by which he has arrived at the conclusion, that the tetracodon of Dr. Goodman is the immature state of both sexes of the *Mastodon giganteum*, and that it loses those distinctions in the mature state of both sexes, by the loss of one tusk in the male, and by the loss of both in the female. These conclusions are founded on careful measurements, which establish a close similarity in size and proportion between lower jaws with and without incisor teeth—in the perfect agreement of the conformation of the molar teeth—in the general form of the ascending ramus and the symphysis—and in the place and size of the great foramina for the dental nerves and vessels, being alike in all instances. Prof. Owen then dwells, at some length, upon the nature of the lower tusks, or incisors, which induced Dr. Goodman to found the genus *Tetracodon*, and he shows that, if they should be taken as generic characters, a third genus would be required for these jaws in which only one tusk occurs. But, with regard to these incisor teeth, the author says, it must be remembered, that, in many species, both of cetacea and pachyderms, incisors, as well as canines, are subject to very great variety, in relation to the age and sex of the same species of animal. In the male dugong the upper incisors are protracted, acuminated, and of unlimited growth, while in the female they are concealed, capsulate, and solid at their base, which is expanded. In both sexes the lower jaw is provided, at its deflected extremity, with six incisors, which disappear in the mature animals, one or two abortive remnants, at most, being occasionally discovered hidden in the irregular cancellous sockets. In many species of the hog tribe, the incisors, which are present in the young animal, are lost in the full grown; but the most remarkable example of the relation of very distinct conditions of incisor teeth, or tusks, to age and sex, is that of the narwhal. The young of both sexes have a single incisor equally developed on each side of the upper jaw, one of which grows rapidly in the male, constituting the well known spirally twisted tusk, while the other remains stationary, and both continue rudimentary in the female. "If," says Professor Owen, "it be supposed, for a moment, that the dugong and narwhal were extinct, and could be judged of only by their fossil remains, the skulls of the two sexes of the herbivorous cetacean viewed relatively, would, doubtless, be referred to two distinct species, the identity of the molar teeth perhaps impressing the more cautious palaeontologist with a strong suspicion of their generic identity." "But," he continues, "the cranium of the male narwhal, with its unsymmetrical distortion, increased by an enormous tusk, would, it can scarcely be doubted, have been referred to a genus of cetaceans, quite distinct from that to which the edentulous, and more symmetrical skull of the female narwhal would be considered to represent." Professor Owen next shows, that in the so-called tetracodon and the mastodon, the mode and order of succession of the molar teeth correspond. Moreover, the lower jaws of both present those characters by which the *Mastodon giganteum* is distinguished from the genus *Elephas*; and Professor Owen observes—"When we reflect on the striking modifications by which the lower jaw of the elephant differs from that of the mastodon, it cannot be supposed that no corresponding variation should be present in the lower jaws of the mastodon, and another genus of proboscideans, characterised by difference in the number of the teeth. I know no analogy in the whole mammalian series which would justify such a belief. Tetracodons appear, from Mr. Koch's collection, to be as numerous as mastodons, yet as little do we perceive or hear of two forms of bunnies, white, rufous, or black, or of two forms of lower jaws; while the frames of the *Elephas* progenies associated with them, are at once recognisable by modifications, which might be expected to accompany true generic differences in the rest of the organisation." With the exception, therefore, of a few bones of the mandible, Professor Owen refers all the other remains of proboscideans—pachyderms in Mr. Koch's important collection to the *Mastodon giganteum* of Cuvier; and they illustrate, he says, the true and very remarkable characters of that extinct animal in a more complete manner than has ever before been done, and clear up the doubts which the inspection of solitary specimens had occasioned. The height of the skeleton, taken at the withers, of fossil species, provided the collection of the bones were correctly observed, Professor Owen estimates at ten feet, and the length from the intermaxillary bones to the end of the sternum at sixteen feet, or four feet more than that of the large *Avicula* elephant in the Hunterian Museum.

Mr. Owen then enters upon the question connected with the probable use of the lower tusks, and he states, that if they were to be regarded as generic distinctions, constantly associated in both sexes with the enormous upper tusks, no explanation could be given of so apparently useless an appendage; but if considered as the distinctive character previously mentioned in the memoir, there are abundant examples, in the animal kingdom, of the functional importance of external distinctions. With respect to another question, why two tusks should be originally developed, and especially in the female, in which neither are to be retained, he says there is an equal difficulty with respect to the two rudimentary tusks in the female narwhal, and of the single one in the male—to the abortive incisors in the symphyseal part of the lower jaw in the dugong, and to the rudimentary teeth in the lower jaw of the fossil whalebone whale, as well as in the upper jaw of the sperm whale. In these, and many analogous instances, a structure may be perceived which, only sketched out and functionless in one species, is perfected and performs important uses in a closely allied species. Thus, the teeth, which are sketched forth in the lower jaw of the fetal whale, are fully developed in the adult; the upper rudimentary maxillary teeth which remain hidden in the gums of the sperm whale are functionally developed in the sperm whale's progeny; and in pursuing the same argument as applied to pachyderms, it shows that the gigantic distichodont, discovered by Dr. Keap, exhibits the full and functional development of the inferior tusks, which in the mastodon are sketched only in their rudimentary state. Mr. Owen then dwells on the beautiful transitional modifications in the molar teeth of the elephant, the elephantine *Mastodon* of Aves, the mastodon of the Miocene, the distichodont, and the tapir; and he adds that the singular structure of the lower jaw of the distichodont might be expected to be most closely dissimilar in the species of mastodon, which most nearly approach the distichodont in the form of the grinding teeth. In conclusion, Professor Owen states, that since he arrived at the inferences set forth in this paper, he has perused a recently published account of Mr. Koch's collection, by Dr. Hays, in which that naturalist maintains the generic distinctions of the tetracodon. Mr. Owen, however, after a careful consideration of the arguments advanced by Dr. Hays, feels only more strongly assured that the tetracodon and mastodon are one animal.

The other extinct animals, the remains of which are exhibited in Mr. Koch's collection, are referred by Mr. Owen to the *Elephas* (the supposed fossil *Elephas*), the *Archæotherium* (called *Orycterodon*), and a large species of *Perissodactylus*.

PROCEEDINGS OF PUBLIC COMPANIES.

COPIAPO MINING COMPANY.

The half-yearly meeting of the proprietors of this company was held at their office, 22, Abchurch-lane, on Thursday, the 24th inst.

HENRY HARMAN, Esq., in the chair.

This meeting was made special, for the purpose of filling up two vacancies in the direction; the following gentlemen, J. Deacon, Esq., and C. H. Ellis, Esq., offering themselves as candidates, were unanimously elected directors of the company.

The minutes of the last meeting having been confirmed, the CHAIRMAN read the following report of the directors on the state of the company's affairs:—

REPORT.

The directors have, in the first place, to state the arrival of the *Blonde*, at Swansea, on the 11th December last, bringing a cargo of 250 tons of copper ore, which has averaged 55 per cent. of copper, and was sold on the 26th of last month for 31.5s. per ton. Two other vessels—namely, the *Flamenco* and the *Cerberus*—sailed from Valparaiso, for Copiapó, in the month of October last, and their arrival may be daily expected. Another cargo would be ready on the beach for shipment shortly after their departure from Copiapó. The stock of ore belonging to the company in the valley of Copiapó, at the date of the last advices (28th September), including the two cargoes above-mentioned, was about 2500 tons, exclusive of about 200 tons lying at the Coast Mines. With the advice and concurrence of the mining captain, the manager informs us that he has concluded a contract for the exclusive working of a copper mine, called La Quebrada, favourably situated, about a league from the company's property at Piqueno, upon the payment of a royalty, equivalent to about 15s. per ton of clean ore. This mine he thinks likely to yield a regular supply of ore, of good quality; the quantity raised there during the month of August amounted to eighty tons.

At the last meeting the directors stated that they had undertaken to work a silver mine called Pampa Larga, and although the operations at the mine have been retarded by the falling in of a part of the old workings, they have the satisfaction to state, that, at the date of the last advices, there was every reason to believe that the mine would shortly become productive. In consequence of permission granted to the manager to extend his operations in silver mining, upon a distant scale, in situations which the mining captain might deem favourable, it had been deemed expedient to employ a silver mine, named San Juan, situated at Pajonales, in the district of Chiriquito, and an agreement had been concluded, on the company's behalf, for the exclusive working of the same, upon payment of a royalty of one-twelfth of the produce. This mine is situated upon the southern boundary of another silver mine, which has been for some time past in profitable working by other parties. Captain Treblecock commenced operations at this mine, with a small party of miners, in the month of June last, and he reports very favourably as to its prospects. He had, at the same time, been induced to denounce, for the use of the company, a vacant spot of ground, near to the mine, which he could and did offer very favourable indications; he is of opinion that these silver mines will, at no distant period, prove a valuable acquisition to the company. Some rain which fell between Copiapó and Huacana, in the month of June last, produced pasture in the plains, and the fall of snow in the Andes had increased the water in the river. The stock of maize belonging to the company, at the date of the last advices, amounted to about 300 head. The company have at present in their employ sixteen English miners, besides fifty two natives. The directors regret that, from the long delay which occurred in the arrival of the *Blonde*, the proceeds of the cargo have been required to meet the current expenses of the company, which has prevented its being applied to the payment of a dividend; they beg, however, to assure the shareholders, that, as soon as they can realise the two cargoes which are duly expected, they will not delay to make a distribution.

The report having been received and adopted, the thanks of the meeting were unanimously voted to the chairman and directors, after which the meeting separated.

IRISH WASTE LAND IMPROVEMENT COMPANY.

The half-yearly general meeting of the proprietors of the above company was held at the offices, Old Broad street, on Thursday, the 24th inst.

J. M. MAUDE, Esq., in the chair.

The advertisement convening the meeting having been read, the CHAIRMAN submitted the directors' report, which stated that Colonel Robinson had been appointed by the directors to inspect and report upon the different estates in Ireland belonging to the society, and was, at the date of that report, occupied with Mr. Fetherston, a resident director in Ireland, in inspecting the estate of Ballinakil, of which Mr. Fetherston continued to entertain a very favourable opinion. Colonel Robinson, after inspecting all the company's estates, investigating all the stewards' accounts, suggesting and prescribing plans for the future more systematic and regular keeping of them, and for their future correspondence with the directors, presented a most interesting and important report on all these matters, which now lies at the office for the inspection of the proprietors. From this report, as also from advice and information since derived from their agents, the directors had much pleasure in stating, that the favourable reports which they had, from time to time, been enabled to make to the proprietors, respecting the estates of Ballinakil and Glenmark, continue to be highly encouraging. Assistance had been rendered to the tenants, in advances of materials, to enable them to build or improve their houses, the society itself, in several instances, having built good houses for them, on condition of their taking about twenty or thirty acres of land attached to each house, paying interest in the shape of addition to their rentals, for the money expended on the house, and gradually in redemption of the principal. In this manner eight houses have been erected, and completed at a cost of about 2000l., and with about 100 acres of land attached to them, had been let in respectable tenancy; two others are nearly completed. Besides these lettings, about 800 acres of land (making a total of 1000 acres) had been let up to this time, at an average rental of 6s. 6d. per acre, the head rental on the 5700 acres of which the estate of Glenmark consists being 2s. 3d. per acre. The roads, bridges, &c., were in general good order. Of the estate of Kilkenny, consisting of about 9000 acres, at an annual rental of 8500l., about 5000l. was receivable at the time Colonel Robinson took possession of it on behalf of the company, 4500l. of which, he states in his report, may fairly be relied upon within two or three months of its becoming due, each tenant having, at all times, more property on the land than was sufficient to cover the rent. The directors have now to report that the second call not having been paid upon 730 shares, and the same having been declared forfeited, now awaits the confirmation of the general meeting. A further call of 2l. per share was made payable in two instalments of 1l. each, on the 10th of January and 10th of April. Colonel Robinson had undertaken the correspondence with the different agents of the society in Ireland, subject to the control of the directors.

The accounts showed a balance of cash and bills in hand of 7481. 4s., and a balance of assets, over liabilities, amounting to 70564. 11s. 6d.

Captain DENNY required the amount received from the shareholders up to the 31st December, 1841.—The SECRETARY replied 17,925l., and explained that the difference between that and the present available assets arose in consequence of the expenses attending the prosecution of the Act of Parliament, and the expenses of carrying on the company since its establishment, no returns having as yet been realised.—The CHAIRMAN then, with the assistance of the directors, gave some explanations, which were pronounced satisfactory by the meeting.

Cd. ROBINSON gave a long and very able and encouraging statement of the improvements that had been made by the company, in reclaiming, and rendering available for agricultural purposes, land that was before perfectly valueless. The different estates were described, and most interesting information to the shareholders with respect to each of these given, showing that on these estates, where previously there were either no tenants at all, or merely one or two scattered here and there in great poverty, now there was a constantly increasing number of occupiers, comfortably situated, and a small portion of the ground on one estate, which was before yielding only a scanty pasture, was, at the present, yielding 1000l. per annum. The model farms were going on well, and promised, by the force of example, to improve the system of husbandry in the immediate neighbourhood. The total sum wanted to complete all the arrangements, and to put the estates in such a position as to give a dividend to the shareholders, would be about 2000l.; the call last made would, when paid, be sufficient to effect this, without any further call upon the proprietors. He had gone over all the estates with several practical farmers, &c., who fully agreed with him in his estimates.

A long conversation then ensued upon the underwriting, and the forfeiture of the shares, several of the proprietors strongly objecting to that course, as rendering the number of shareholders, and, consequently, the strength of the company. Ultimately, after some explanation, the report was unanimously approved of, excepting the parts which related to the forfeiture of shares and the election of directors, these being deferred for some consideration.—On the motion being put for the forfeiture of the 730 shares, some conversation ensued, during which it came out, that, amongst those to be forfeited, were the shares of J. Pratt, a partner, and wholly unable to pay, transferred to him by Thomas Leslie Murray, Esq. (a director); J. Gough, another partner, in the same predicament; J. Wright (the banker); six shares; R. Widdell (who had been transferred); six shares; G. Hardacre (an Irishman); forty shares; and David O'Connell, Esq., M.P., Lord Mayor of Dublin (one of the patrons of the company), twenty shares.—The CHAIRMAN explained, that the directors had used every endeavour to prevent Mr. T. L. Murray from transferring the 100 shares into the name of J. Pratt, but they found they had not the power to refuse him.—The proprietors were very indignant at Mr. T. L. Murray's conduct, and one of them moved that he should be removed from the direction, but, as being informed, that, as he went out of the direction by rotation, the proprietors need not molest him, the motion was withdrawn.

It was then resolved unanimously, that the above-mentioned shares should be forfeited, with the exception of those belonging to the patriotic Lord Mayor of Dublin (David O'Connell, M.P.), who was to be proceeded against, by law, to recover the calls in arrears on shares held by him to this company, whose operations are calculated to render such great and lasting benefits on Ireland and her distressed population.—Colonel Robinson observed, that it was due to Mr. T. L. Murray to state, that he had paid one of the calls on 10

shares, amounting to 2000l.—a course which, however, was indispensable, previous to the transfer being made.—It was then unanimously resolved, "That the Earl of Devon, C. Fitzsimon, and J. Heathcote, Esqs., should be re-elected directors."—N. Danvers (of Cork) was then unanimously elected a director, in place of Mr. Thomas Leslie Murray.

In reply to a proprietor, Colonel ROBINSON again stated, that no further call would be required, to perfect their present three estates, beyond the one already made, but not yet due; and, further, that no other estates should be negotiated for before those now in the possession of the company should yield a dividend to the proprietors.

Thanks were voted to the chairman, and to Colonel Robinson (whose disinterested conduct was highly eulogised), when the meeting adjourned.

GREAT WESTERN RAILWAY COMPANY.

The half-yearly general meeting of the proprietors of the above company was held on Thursday, the 24th inst., at the offices of the company, Princes-street, Bank.

C. HUBBELL, Esq., M.P., in the chair.

Mr. SAUNDERS (the secretary) read the report. It expressed the pleasure of the directors in laying before the proprietors the result of the first six months' business on the entire line of the Great Western Railway, together with that on portions of the Bristol and Exeter, and of the Cheltenham Railway, between Swindon and Cirencester. The gross receipts for six months, up to the 31st of December, 1841, were 337,352l. 4s. 2d., of which sum 295,010l. 18s. was earned exclusively on the Great Western Railway. The number of passengers conveyed on the line, between the 1st of July and 31st of Dec., 1841, was 892,119, travelling an aggregate number of 27,536,784 miles. The expenses on the traffic amounted to 129,910l. 6s., being in the ratio of 37.323 per cent. on the receipts. The locomotive expenditure was 49,110l. 19s. 6d., of which 23,146l. 3s. was paid for coals, but which would become much reduced, arrangements having been made for procuring it at Bristol. The number of miles run by the engines, during the half-year, was 673,398, of which 613,616 miles were travelled by regular engines with trains of passengers and goods, and 59,782 miles by the assistant engine upon the line; and the sum of 15,940l. 14s. 11d. had been paid for Government duty. The first charge upon the profit of the half-year was the interest on the company's debt, and the rent payable, under lease, to the Bristol and Exeter Railway and the Cheltenham Great Western Union Railway Companies, to the amount of 93,295l. 10s. 11d., which, deducted from 312,466l. 16s., would leave a balance available to the company of 119,171l. 5s. 1d. The law charges for the half-year only amounted to 177l. 1s. 8d. The report, after recommending that the sum of 30,000l. per annum should be appropriated for ten years, to meet the first cost and probable depreciation of stock, concluded by recommending that a dividend at the rate of 6 per cent. per annum on the amount called up should be declared for the last half-year.—The engineer's report, after referring to the satisfactory state of the works throughout the line, alluded to the late dreadful accident at Swindon hill, which was attributed to a large basin of gravel, existing within the clay near the cutting, which becoming overcharged with water pushed the top of the slope into the cutting, and with it a thin bed of sandstone, which caused the engine to go off the rail. Against such contingencies it was impossible, either on a railway or any other work, to provide.—The report having been adopted, four directors were elected, in the room of that number of gentlemen who went out by rotation.

EASTERN COUNTIES RAILWAY.

At a special general meeting of the proprietors of the above railway, held at the company's station, Shoreditch, on Tuesday, the 29th inst., a resolution was passed, after some discussion, authorising the directors to issue new shares, interest to be allowed upon those immediately paid up to the date of the last call to be made, and after that to receive dividends on the same footing with the other shareholders. The forfeiture of 257 shares was then confirmed, and the meeting separated.

BIRMINGHAM AND GLOUCESTER RAILWAY.

The half-yearly meeting of the proprietors of this company was held at Gloucester, on Friday week. Captain C. R. MOONHAM in the chair. From the report submitted to the meeting it appeared that the total receipts of the company, for the half year ending December 31, were 59,114l. 6s. 10d., and the expenses, including interest, 30,351l. 6s. 8d.—leaving a balance, upon the 31st of Dec., of 10,763l. 5s. 2d., which, added to the balance declared on the 30th June, of 11,707l. 6s. 3d.—made a total of 22,470l. 11s. 5d., from which, however, there were to be deducted for wear and tear, depreciation of the carriage stock, &c., 6120l.—leaving a clear net profit of 16,350l. 11s. 5d.; with this the directors were enabled to declare a dividend of 1l. 10s. per share, which is the first dividend that has been declared since the commencement of the undertaking. A proposition in favour of establishing Sunday trains was brought forward, but subsequently withdrawn. The total number of passengers that have travelled upon the line during the six months ending December 31, was 193,276, of which number 50,304 were first-class, and 117,968 second-class passengers.

[It will be in the recollection of our readers, that at the last meeting a vote of censure was passed on Mr. Gibbins (one of the committee) for alleged trafficking in shares; it is only due to that gentleman to state, that in consequence of subsequent inquiries and explanations, that resolution was rescinded at the present meeting.]

THAMES HAVEN DOCK AND RAILWAY COMPANY.

The half-yearly general meeting of the proprietors of the above company was held on Wednesday, the 23d inst., at the offices of the company, St. Mildred's-squre.

JAMES KENDALL, Esq., in the chair.

The advertisement convening the meeting having been read, the SECRETARY submitted the report, which explained that the late call of 2l. 10s. per share, was made in consequence of the directors finding that many of the proprietors were disposing of their shares to incompetent persons. The large and unprofitable interest of a large proprietor, which, while it produced nothing to the company, was a dead weight to it, had been forfeited. Those shares which by repurchase, transfer, or forfeiture, had returned into the office, and upon which the deposits were paid, would be sold at 5l. per share; the remainder which had never been disposed of, would be sold at the price of 7l. 10s. per share. As an inducement to parties to become investors in the company, the directors proposed to give 5 per cent. per annum on all calls as they were paid in; and to charge interest on all calls not paid on the day fixed. By this means they hoped, when they once commenced the works, many persons might be induced to pay their calls in advance, whereby the works would be much earlier finished and brought into profit; then, in a line of only fifteen miles to make, might be done in one year.—The statement of accounts showed that the total expenditure from September, 1835, to December, 1841, had amounted to 25,066l. 12s. 6d., and the receipts, for the same period, to 26,915l. 3s. 6d.—leaving a balance in hand of 1848l. 10s. 6d. The available cash assets amounted to 3097l. 10s. 1d.—Resolutions were then passed adopting the report, and approving of the conduct of the directors.

A gentleman, not a proprietor, then made an application, on the part of the company for the manufacture of Great's Patent Fuel, and who had contracted to supply Government with a large quantity, to rent some of the company's unoccupied land, and requested to have the preference in point of choice of situation.—The CHAIRMAN, in reply, stated that the board would be happy to receive any proposal from the gentleman interested.—The meeting then adjourned.

SOUTHAMPTON DOCKS COMPANY.

The half-yearly general meeting of the proprietors of the above docks was held at the office, 15, Brompton-street, within, on Friday, the 25th inst.

J. LINDLEY, Esq., in the chair.

The SECRETARY having read the advertisement convening the present meeting, and the minutes of the last having been confirmed, he then read the directors' report, which attributed the delay that had taken place in the completion of the works to the bad weather which had occurred since the last meeting, but the tidal dock was fully expected to be opened by June next.—It was then moved that the report be received, printed, and circulated amongst the proprietors.

Mr. RICHARDS then made some observations upon the shares that had been forfeited at the last meeting, and which he begged to parties who had put their names to the deed to only get the Act of Parliament. He also alluded to 7450l. that was due from the contractors of the works upon 170 shares.—The CHAIRMAN contended that the former directors did right in propering the Act by that amount, and instead of being blamed for it they ought to receive the greatest praise. As to the contractors, the shares would not be forfeited, but they would be liable for the wants of the docks. The reason why they could not pay at the present time was because of the great loss they had sustained in consequence of the badness of the weather, which had delayed the progress of the works. Every contract had been executed by Mr. Child before he being put in hand, and every means of expediting had been made use of, as would sufficiently show itself when he stated that over a space of six acres 10,000 men had been employed upon the works, which were of a dangerous description, they being twenty-two feet below low-water mark, and the tide rose fourteen feet. The fact of the tide had weather having caused an additional expense of 97,000l. in the formation of the Brighton Railway would show that it was not only the Southampton Docks Company that had suffered.

After some further conversation, the question for the adoption of the report was put and carried unanimously. Four directors were then re-elected.—Upon the question of the forfeiture of every share upon which the calls had not been paid, much discussion arose, several of the proprietors demanding that the names of the parties holding the shares should be given, but ultimately the motion was carried unanimously.—The CHAIRMAN then explained that he could certainly state that the arrears upon a number of forfeited shares would be paid up by the parties to the extent of 200l. per share.—Colonel BAKER then moved the thanks of the meeting to the chairman and directors, and the meeting then adjourned.

BOROUGH OF ST. MARYLEBONE BANK.

At a meeting of the proprietors of the above bank, held on Tuesday, the 22d inst., at the Bear and Castle, Oxford-street, the CHAIRMAN explained that no satisfactory accounts had been made out by Mr. HANNA, and that write had been issued against four of the proprietors by Messrs. Richards and Waller, who refused to continue their actions upon one bill, and thus settle the same and save expense. The expenses of the committee had been very moderate since August last, they only amounting to about 600l., which had been paid out of the fund, but by Mr. Hothe and Mr. Abraham.—A resolution was then proposed, to the effect that the committee should be empowered to get in any accounts, and enter into their examination, in order that they might be laid before the proprietors at the next meeting—which being seconded, was carried. Other resolutions for the management of the affairs of the company were then carried, and the meeting adjourned.

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMBAUGH MINING COMPANY.

Feb. 21.—I beg leave to inform you that the lode in the 110 fathom level is seven inches wide, with a small proportion of ore; the cross-cut at this level is holed to the level driving on the north lode. The lode in the 100 fathom level, west of Wall's shaft, is still about one foot wide, and worth 142. per fathom; in this level east we are cross-cutting toward the south part of the lode; the winze in the bottom of this level is sunk to the 110 fathom, and men just commenced driving the 110 fathom level, east of the winze, on the course of the lode. The lode in the eastern stopes, in the back of the 100 fathom level, is eighteen inches wide, and worth 261. per fathom; the lode in the western stopes, in the back of ditto, is twenty inches wide, and worth about 381. per fathom. In the sixty fathom level west the lode is one foot wide, and worth 127. per fathom; the lode in the eastern stopes, in the back of this level, is eighteen inches wide, and worth 261. per fathom; the western stopes, in the back of ditto, are without alteration—lode two feet wide, and worth 441. per fathom. In the winze sinking below the sixty fathom level, no lode taken down during the past week. In the eighty fathom level east we are driving south, for the purpose of cutting a part of the lode that we think is in this direction; the lode in the stopes, in the back of this level, is eighteen inches wide, and worth 261. per fathom. The seventy fathom level, east of Wall's shaft, on the Flagjack lode, and the sixty-two fathom level, east of ditto, on the Holmshush lode, are without important alterations. The tribute pitches are still looking favourable. F. PHILLIPS.

TREVELLAIN MINING COMPANY.

Feb. 21.—It affords me pleasure in being able to inform you that the lode in the forty fathom level east is of a very satisfactory description, producing ore on the south part of the lode worth about 101. per fathom; the lode (as you are aware) being generally very large, we have thought proper to cross-cut from the present end, to ascertain whether it is productive on the north part also, and in my next I hope to furnish you with the result in extending the other cross cut north; the ground is becoming more favourable for driving; with this exception, we have met with nothing new at this point since my last. Friday last being our monthly setting-day for March, we set twelve tribute pitches, varying from 45. to 125. in the 11. We expect to sample, on Monday next, at par, about 45 tons of ore. J. NICHOLS.

UNITED HILLS MINING COMPANY.

Feb. 22.—Williams's Shaft.—No lode broken in this shaft for the past week. Sixty Fathom Level, Eastern End.—Lode four feet wide, eighteen inches ore, of a fair quality; western end, lode six feet wide, coarse in quality. Fifty Fathom Level.—In the eastern end of this level the lode is two feet wide, good ore; western end, lode six feet wide, ore throughout, but not rich. Forty Fathom Level.—The lode in the eastern end is two and a half feet wide, one foot on the south part good ore; in the western end the lode is four feet wide, and producing but little ore. James's Shaft.—Lode three feet wide, with little or no alteration since last reported. Diagonal Shaft.—Lode four feet wide, with stones of ore. Forty Fathom Level.—In this winze the lode is two feet six inches wide, eighteen inches good ore; nothing done in the eastern end for the past week—the men have been employed at surface. Thirty Fathom Level.—Lode fifteen inches wide, six inches on the north part producing ore. Twenty Fathom Level.—Lode two and a half feet wide—poor. N. GLANVILLE.

WEST WHEAL JEWEL MINING ASSOCIATION.

Feb. 21.—Hughesham's engine-shaft is sinking below the seventy fathom level, in favourable ground. In our last we stated we had cut Wheal Jewel lode, west of the cross course, at the seventy fathom level; we find, however, that it is but a branch which we intersected in the level above, about nine feet north of the lode; we have, therefore, about that distance to drive before we cut Wheal Jewel lode. The rise in the back of the fifty-seven cut, on the south branch, is worth 60. per fathom, but we are obliged to suspend it for want of air, and have put the men to continue driving west on the lode. The fifty-seven west, on Wheal Jewel lode, we think we are nearly through the disordered ground in this level. No alteration in any other part of the mine. STEPHEN LEAN.

TREVELLAIN MINING COMPANY.

Feb. 19.—We have again drained the bottom level, and commenced driving each way, but without any marked alteration since our last. The sixty west has not been taken down since our last; this level east is two feet wide, of a promising nature. The fifty west is three feet wide—worth 300. per fathom. The tributaries working this level east are raising good ore. At Grand Fortune the forty-four west is six feet wide, but nothing worth saving; this level east is two feet wide, and worth 81. per fathom. At the old camp shaft we have intersected three branches, which appear to concentrate; we expect they will unite in depth, and become a good lode. W. SIMCOCK.

TREVELLAIN MINING COMPANY.

Feb. 21.—The lode in the thirty fathom level, east of Williams's shaft, is two inches wide—tribute ground for copper. Trevellain's lode, driving east of John's shaft, is nine inches wide—tribute ground for copper. Trevellain's lode, driving west of John's shaft, is one foot wide, and producing some good ore. We are driving north, at the 40th level, from the 11th lode, to cut the other part, which we believe to be further south. We have sampled this day 177 tons of copper ore. H. WILLIAMS. J. MURDOCH.

GREAT WHEAL CHARLOTTE MINING COMPANY.

Feb. 21.—I beg to send you the report of this mine. We have stopped the men from driving the eighty-two fathom level south for the present, and put them to stop down a piece of the lode in the sixty-two fathom level, west from engine shaft, and near the side, which stops is yielding fine ore of ore per fathom, and worth 41. per ton. We are rising in the back of the eighty-two west, but have not taken down any of the lode since last reported. We expect to hole the winze sinking down from the seventy-two fathom level, on this rise, in about a week from this time. The lode in the stopes, east and west of Bottom's winze, in the bottom of the 72 fathom level, are producing four tons per fathom each, and worth 41. per ton. The two stopes east and west from Buddell's winze, in the bottom of this level, are turning out four tons per fathom, and worth 41. per ton. The lode in the seventy-two fathom level west is seven feet wide, with some good stones of ore; the lode in the stopes, back of this level, is six feet wide, and worth 151. per fathom. The lode in the stopes, bottom of the sixty-two west, is five feet wide, and worth 151. per fathom. S. TREVELLAIN.

NEEDHAM CONSOLIDATED MINING COMPANY.

Feb. 21.—At the sixty fathom level going north the lode is split into two branches, one of which is about four inches big, rich for silver-lead ore, and, from the present course of these branches it is likely they will come from a junction, and, consequently, an improvement may be expected; in the south end, at this level, the lode is six inches wide, very rich—a promising level. Driving south, at the fifty fathom level, the lode is from six to eight inches in width, good saving work; the lode in the north end, at this level, is four inches wide, lowly; going east at this level, on the copper lode, the ground is not quite so favourable for driving as hitherto; the lode is from eighteen inches to two feet wide, but at present unproductive. In the south end, at the forty fathom level, the lode is eight inches big, composed of white iron, pebble, and lead ore; at this level, going north, the lode is eight inches in width, leady throughout—a kindly and at present. The tribute pitches are looking much as usual. On Saturday last we sold to Mr. Somers 12 tons 7 cwt. 3 qrs. of silver-lead ore, at 175. 3s. 6d. per ton—2151. 6s. 4d. The copper ore we are not yet sold. F. R. BROWN.

TAMAR SILVER-LEAD MINING COMPANY.

Feb. 21.—I beg to send you the following particulars as a report. In the 120 fathom level the lode is just the same width and quality as stated last week (about one foot wide, producing a little ore), but the ground is somewhat more favourable for driving. In the 110 fathom level the lode is eighteen inches in width, producing ore mixed with unspelled soft ore. In the 100 fathom level the lode is two feet wide, just of the same quality. In the ninety-five and the lode is not quite so easy as stated in my last, but it is still producing saving work, and about one foot wide. In the eighty-five fathom level the lode is two feet wide, producing ore, but not rich. In the seventy-five fathom level the lode is in width and composition, and the ground is also hard for driving. In the sixty-five fathom level the lode is two feet wide, carrying branches of silver-lead ore. In the fifty-five fathom level there is an improvement, the lode is now two feet wide, one foot of which is good ore. In the thirty-five fathom level the lode is one foot in width, at present poor. We shall sample next Thursday; the quantity will be just as usual, about 150 tons of fine silver-lead ore. F. BROWN.

BRASSLAW COMPANY.

North Brinsford, Dec. 14.—In the mine appears nothing promising; the north-west end is opening, but still samples poor. On the 1st, 2nd, and 3rd, we have not yet got the lode. W. CORNWORTHY.

